THE ART OF DISNEY BIG HERO 6

BY JESSICA JULIUS

PREFACE BY JOHN LASSETER

FOREWORD BY DON HALL AND CHRIS WILLIAMS

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CHRONICLE BOOKS
SAN FRANCISCO

Creating a computer generated animated film involves years of inspired collaboration. Before the final rendered images of *Big Hero 6* were seen on screens around the world, the following artists contributed their talents to the digital images included in this book:

DIRECTORS

Don Hall Chris Williams

VISUAL DEVELOPMENT

Sara Airries
Marty Baumann
Lorelay Bove
Helen Chen
Justin Cram
Kevin Dart
Paul Felix
James Finch
Mac George
Jin Kim
Shiyoon Kim
Ryan Lang
Hyun Min Lee
Minkyu Lee
Jim Martin
Chris Mitchell
Kevin Nelson
Armand Serrano
Jeff Turley
Tadahiro Uesugi
Scott Watanabe
Mike Yamada
Victoria Ying

SET EXTENSION

Brian La France

STORY

Joe Mateo
Normand Lemay
John Ripa
Marc Smith
Lissa Treiman
Dean Wellins
Chris Ure

MODELING

Stefano Dubay
Minh Duong
Dylan Ekren
Isaac Gelman
Brien Hindman
Kevin Hudson
Suzan Kim
Luis Labrador
Alena Wooten-Tott
Larry Wu

LIGHTING

Benjamin Huang
Adolph Lusinsky
Dan Rice
Chris Springfield
Jennifer Yu

RIGGING

Michael Navarro
Jason Robinson

TECHNICAL ANIMATION

Corey Bolwyn
Christopher Evart
Hubert Leo
Mary Twohig
Richard Van Cleave

EFFECTS

Mir Ali
DJ Byun
Eric Daniels
Peter De Mund
Henrik Falt
Ben Frost
David Hutchins
Hendrik Panz
Jae Hyun Yoo

LOOK DEVELOPMENT

Alexander Alvarado
Ian Butterfield
Sara Cembalisty
Ramya Chidanand
Tracy Lee Church
Ryan Duncan
Brian LaFrance
Jack Fulmer
Mia Lee
Nikki Mull
Jared Reisweber
Jose Velasquez

FRONT COVER: **PAUL FELIX** / DIGITAL
BACK COVER: **TADAHIRO UESUGI** / DIGITAL
FRONT FLAP: **SHIYOON KIM** / DIGITAL
BACK FLAP: **SHIYOON KIM** / DIGITAL
ENDPAPERS: **DON HALL** / PEN, GRAPHITE
PAGE 1: **TADAHIRO UESUGI** / DIGITAL
PAGES 2–3: **RYAN LANG** / DIGITAL
PAGES 4–5: **TADAHIRO UESUGI** / DIGITAL

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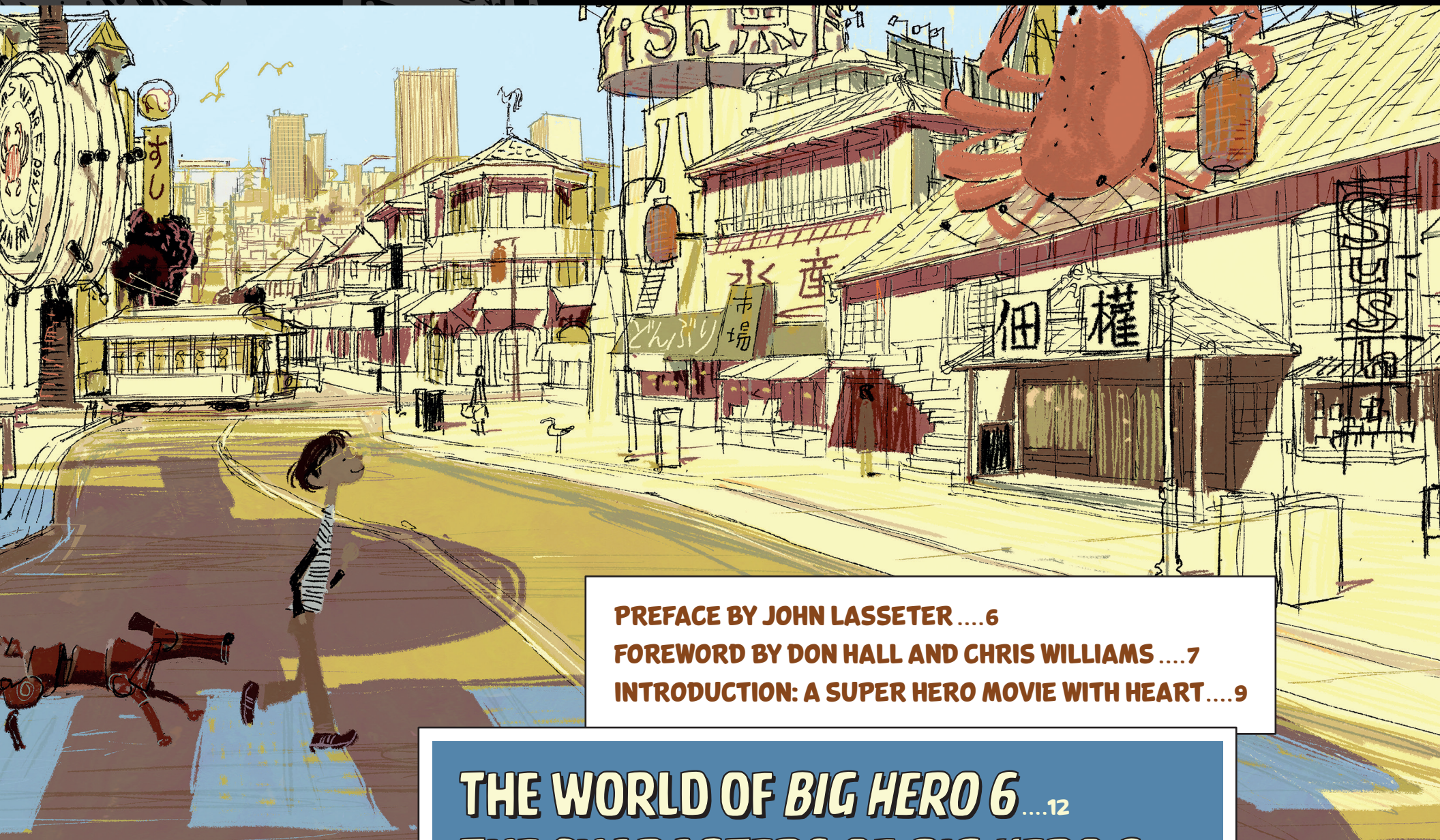

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PREFACE

Ever since I returned to Walt Disney Animation Studios in 2006, I've loved working with the brilliant filmmakers here who bring our stories to life. Some are veteran directors and others are emerging talents. Right away, back when he was Head of Story on *Meet the Robinsons*, I realized Don Hall was one of those up-and-comers. Both he and Chris Williams, who at that time was beginning his first directing project with *Bolt*, are incredibly smart with story. And both are willing to keep pushing to make things better. So, after successfully co-directing *Winnie the Pooh*, when Don asked if he could look into Marvel's catalog for inspiration for his next project, I said "yes!"

As a huge comic book fan, Don dug deep into the world of Marvel comics. He discovered this series of six obscure comic books that were outliers for Marvel, inhabiting a discrete world and with an unusual style. These are important factors when we develop our films. But *Big Hero 6* seemed truly exciting because it had tremendous emotion. When directors pitch project ideas, the number one thing I ask is, "where will the heart come from?" At its core, it's the story of two brothers, and how the younger boy becomes whole again through a surrogate brother, which is the robot Baymax. That's the reason we thought, "this will make a great movie."

The second thing I always ask is, "what's unique to this world, this setting?" It's something you just can't change later. The story, plot, and characters will all evolve, but the heart and world are the foundations our movies are built on. Though the *Big Hero 6* comics are set in Tokyo, we wanted the super hero team to live in a mythical place. So we made up our own setting by combining two very sophisticated, iconic cities. Don picked San Francisco, merged it with Tokyo, and out of that came San Fransokyo. The artists drew upon elements from both cities—the street fashion, the signs and advertising, the food, the cable cars of San Francisco and bullet trains of Tokyo—to create a metropolis that feels fresh.

When we first conceived of the visual language for the movie version of *Big Hero 6*, we wanted something completely original. We didn't want to do a typical anime look. When you're working in a familiar genre, like super hero movies or Japanese anime, the challenge is carving out a distinctive world so audiences think, "Wow, I haven't seen this before." So the production designer, Paul Felix, had to find an exciting way to tell the story visually that felt truly different and cool. To achieve the film's overall look, Paul, who is one of the best at creating believable environments, focused on the particular quality of light in San Francisco, which is unlike anywhere else. The result is very cinematic but also feels like a place where people actually live.

A defining moment during visual development was the discovery of the look for the main robot, Baymax. On all our films, I encourage our teams to do tremendous amounts of research. In this case, the filmmakers researched robotics, including interesting new aesthetic approaches. They saw a prototype of an inflatable, soft robot and knew it was something extraordinary never before seen in computer animation. Off this inspiration, we found the essence of Baymax's simple design. But the refinement of it, getting the shapes just right, was harder. If he got too narrow in the shoulders, or his legs were too long or short, it changed his whole personality. It was one of those things that had to be just right. And every time he walks he sort of jiggles, which we thought could be really funny and appealing in animation.

"Appealing" was a key word while developing all aspects of *Big Hero 6*. The city, the robot, the character designs, the super hero costumes—all have great appeal. The heart of the brothers' story, set in this modern, mythical combination of Tokyo and San Francisco, coupled with the unique visual sensibility, make this film genuinely innovative. Don, Chris, and their super hero team of artists have brought to *Big Hero 6* all the elements of a very special Disney animated feature.

—John Lasseter

FOREWORD

When the idea of a Disney animated feature inspired by Marvel comic books was first pitched, everyone was immediately thrilled about the challenge it presented. How do you embrace what is awesome about super hero movies while also bringing the distinctive flavor of the Disney legacy—and then turn it into something audiences have never seen before? Finding the right look, personality, and tone for *Big Hero 6* was a huge part of its journey to the screen.

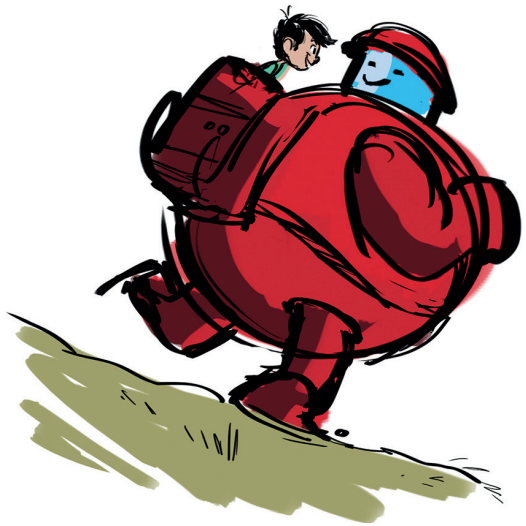
We always knew *Big Hero 6* would be a mash-up of many elements because it is a real genre-buster. It's the story of a boy and his robot, but it's also a super hero origin tale. It's set in a world that fuses Tokyo with San Francisco. The animation, camera work, and lighting all combine techniques from computer-generated animation with those from live-action films. Even the characters embody a blend of cultural aesthetics. As directors, it's our job to turn all these disparate ideas and fantastic images into one coherent and entertaining movie—one that we hoped would combine the action-adventure storytelling found in comic books with the heart and humor that Disney is known for. But the unique overall look of the film is due to the enormous talent and creativity of the artists who brought it to life.

Disney artists bring enthusiasm to all our films, but *Big Hero 6* allowed them to indulge their passions for genres we don't usually get to work in. The blend of comic books and anime with fantasy made people really excited. That the city of San Fransokyo and its inhabitants are so fully realized is a credit to the creative leadership in every department, and every single artist who touched this film. They were vigilant in designing something that looks fantastic and inventive while also feeling grounded and believable. The artists channeled their love for other genres through the Disney lens and emerged with a very cool, whimsical world.

Super hero movies are by definition fantastic, and we also hoped to express the appealing, human moments we personally love as filmmakers. In *Big Hero 6*, that whimsy and charm is personified by Baymax, the utterly unexpected inflatable nurse robot. So much of this film was crafted around his character and design. He's such an unusual creation, and yet another amalgamation—he's a robot, but he's made of vinyl, he's soft and caring. It gives him that specific Disney touch. We hope everyone who encounters Baymax falls in love with him as much as we have.

Hiro's and Baymax's extraordinary relationship is the through-line of the movie. Their emotional story knits all the other elements together. At its heart, this is a film about a boy who is healed by love and learns to deal with loss. But we also wanted to explore the wish fulfillment inherent in a super hero robot story. Our childhood selves needed to watch Baymax and Hiro fly through San Fransokyo on a glorious joyride! Seeing those moments together in one film is part of the mash-up aesthetic that makes *Big Hero 6* unique. We hope that you get the fun and entertainment you expect from an animated film but walk away feeling you've watched something with substance—a character-driven action film with tons of heart and humor. In other words, it's super heroes meets Disney Animation.

—Don Hall and Chris Williams



JEREMY SPEARS / DIGITAL

PAUL FELIX / DIGITAL

INTRODUCTION
A SUPER HERO MOVIE WITH HEART

Big Hero 6 is the fifty-fourth film made by the Walt Disney Animation Studios. But it's their first bona fide super hero action movie. The story follows Hiro Hamada, a teenage genius, who is left adrift when his beloved older brother, Tadashi, dies in a tragic accident. Together with his robot, Baymax, Hiro leads a reluctant team of first-time super-heroes in a fight to stop a masked villain from destroying their high-tech, fast-paced city, San Fransokyo. When designing this near-future alternate-universe fusion of Tokyo and San Francisco, the filmmakers aspired to push the boundaries of what had been created in animation before. But, says Don Hall, director of *Big Hero 6*, "I wanted the story to have tons of heart and humor, because that's what defines a Disney film." Director Chris Williams agrees. "If it's just funny, that can fade away. At its core, this is a story about brothers, and we hope the relationships between Hiro, Tadashi, and Baymax will really resonate with people."

Getting the film on-screen took several years of development. In early 2010, Hall had begun to think about ideas for his next project (after codirecting *Winnie the Pooh*), when Walt Disney Studios acquired Marvel Entertainment and, as Hall puts it, "Everyone in our building geeked out. Childhood dreams were coming true." Disney's animated films often emerge from personal experiences; recalling his deep love of comic books, Hall wondered about the possibility of making a super hero movie.

Meanwhile, Walt Disney and Pixar Animation Studios chief creative officer and executive producer John Lasseter and president, Ed Catmull, had asked the directors to brainstorm ideas for animated shorts. Hall proposed projects that were inspired by Marvel. Excited by the possibilities, Lasseter and Catmull urged Hall to think bigger. "They wanted to find something we could bring over here and make our own," says Hall. "So I started looking for areas that Marvel wasn't already developing, and that were appropriate for animation."

Hall put together a list of Marvel properties he found intriguing, one of which was *Big Hero 6*. "I loved the title, and that it was a Japanese super hero team. It just sounded cool." Given that only thirteen issues had been created over the comic book's ten-year history, says Hall, "I think even Marvel was surprised by my interest in it." Marvel Entertainment chief creative officer Joe Quesada agrees. "There are diamonds buried throughout our library, and Don found one."

Early on, Quesada pitched a take on the tale that differed from the original comics. His idea about a boy who loses his big brother and builds a robot that becomes a surrogate struck a chord. "That was the emotional hook," says Hall.

As the outlines of Disney's first super hero movie began to take shape, Hall brought together a crack story team, including experienced producer Roy Conli (*Tangled*, *Hunchback of Notre Dame*). Together, they asked Chris Williams (*Bolt*) to codirect. "Don thinks about the big picture and always wrestles with theme, while Chris is great with the nuances of entertainment in every scene," says Conli. "They bring out the best in each other." Writers Dan Gerson and Robert Baird (*Monsters, Inc.*, *Monsters University*) found a story line about the love between brothers to be particularly compelling. "The central relationship of this movie is between Hiro and Baymax, the robot," says Baird. "But Baymax is connected to Tadashi, and he fills the hole that was left when Tadashi died." Heads of story Joe Mateo and Paul Briggs, whose job is to help realize the directors' vision on-screen, were instrumental in communicating the importance of that familial bond to the storyboard artists. "The super hero team is cool, but the heart of the story is between the boy and his robot," says Mateo.

Encouraged to make the story their own, Hall and Williams moved away from the source material, and it only loosely inspired the film version. Jeph Loeb, head of television for Marvel Entertainment, says,

"Don and Chris took the barest of bones from the comics, fused it with Marveliciousness, and then married it to the great traditions of Disney Animation." Aside from the title and the character names, the only element that made its way from the comic books into the film is the sense that *Big Hero 6* is a visual love letter to Tokyo.

Hall wanted to be sure to incorporate that Japanese aesthetic into the film. "I had a strong desire to put something on-screen that we'd never seen before." Discovering an exciting new depiction of a super hero world that was inspired by Japanese culture, while also reinforcing the core relationship between boy and robot, began with the design of the robot itself. "Baymax had to look very cool, but the audience also had to fall in love with him right away. I wanted him to be completely original."

It was during the first of many research trips that Hall found what he was looking for. "We met with Dr. Christopher Atkeson, a professor at the Robotics Institute at Carnegie Mellon University. Unlike many Western conceptions of robots, his strong opinion was that they don't have to be evil or destructive, that they can be a positive part of our lives. It's a hopeful vision of robots in the future, which I shared." In addition to discussing philosophy with Hall and his team, Atkeson showed them a prototype of an inflatable arm made out of vinyl being developed for health-care needs. Hall laughs, "He had me at 'vinyl.'"

Co-producer Kristina Reed played a key role in the early development process, and was instrumental in helping the filmmakers assemble their own team of super heroes to fill out the artistic leadership ranks. "Every partner shared the directors' vision and had the skills to help realize it," says Reed, starting with Paul Felix as production designer. According to Williams, who had worked with Felix on *Bolt*, "Paul is a master of light in its graphic form. He can convey with a sketch a sense of atmosphere, where you feel the air, the space, the temperature. It's like magic." Scott Watanabe came on board as art director, environments, and Shiyoon Kim joined as character designer. "When Scott approaches visual development, you can see the thinking behind his pieces. Plus he has a deep knowledge of Japanese culture and puts it on-screen in an appealing way," says Hall. "And I'm a huge fan of Shiyoon's work. He has a very sophisticated approach to character design."

Working with artists skilled in real-world cinematography was essential in developing the look of *Big Hero 6,* so the filmmakers enlisted Adolph Lusinsky and Rob Dressel as directors of cinematography for lighting and layout, respectively, two specialists who know how to work with light and shadows and three-dimensional spaces. To keep things fresh, celebrated comic-book artists such as Geof Darrow (*Hard Boiled*, *The Big Guy* and *Rusty the Boy Robot*) and John Romita, Jr. (*The Amazing Spider-Man*, *Iron Man*), were brought on, as were Japanese illustrator Tadahiro Uesugi and robot designer Shige Kuyama.

With a unique design for Baymax the inflatable robot, the high-tech, mashed-up world of San Fransokyo, and the super hero crew in place, *Big Hero 6* was taking off as Disney's first true action movie. But Hall reminds us, "It's easy to get lost in the big, Marvel, comic-book stuff, but that's not what defines us at Disney Animation. This is a very real, human, grounded story, and Hiro and Baymax's relationship is the core emotional thread of the movie. That's the Disney part."

THE WORLD OF *BIG HERO 6*

Big Hero 6 is set in an intricate urban environment, and the filmmakers were keen to capture that visual density on-screen in a more realistic way than any animated film had done before. Says director Don Hall, "We wanted to strive for realism in the environments, to make it look like a city that people live in, where there's a sense of history and not everything is brand-new. But mixed with really high-tech stuff, so there's visual contrast."

Production designer Paul Felix adds, "There's an infinite amount of detail in the real world that is captured in live-action films. I was interested in seeing how we could do that here. To make San Fransokyo complex in scale and density and embrace the richness of its surroundings in ways that I haven't seen in computer-animated [CG] films."

Inspired by artists such as illustrator Tadahiro Uesugi, and anime films such as *Tekkonkinkreet*, *Ghost in the Shell*, and *Akira*. Scott Watanabe, art director, environments, says classic Disney animated films also influenced his approach to the *Big Hero 6* style. "[The movie] *101 Dalmatians* pushed proportions in interesting ways. I used the term *wonky* to describe it, meaning things are offset, nothing is really straight. In the natural world, that happens over time, like a wooden structure that starts to sag with age. It makes it feel lived-in. I wanted to characterize that without pushing the shapes so far that it felt broken."

Finding the right balance between caricature and realism was no easy feat. As Felix points out, "In an animated film you're creating everything, so it pays to put some thought behind what you're making a conscious decision to show. There is a lot of detail in this movie, and we designed everything in service to the idea that there's a reason for it to be that way. Grounding it helps us, because then you have a point to caricature from."

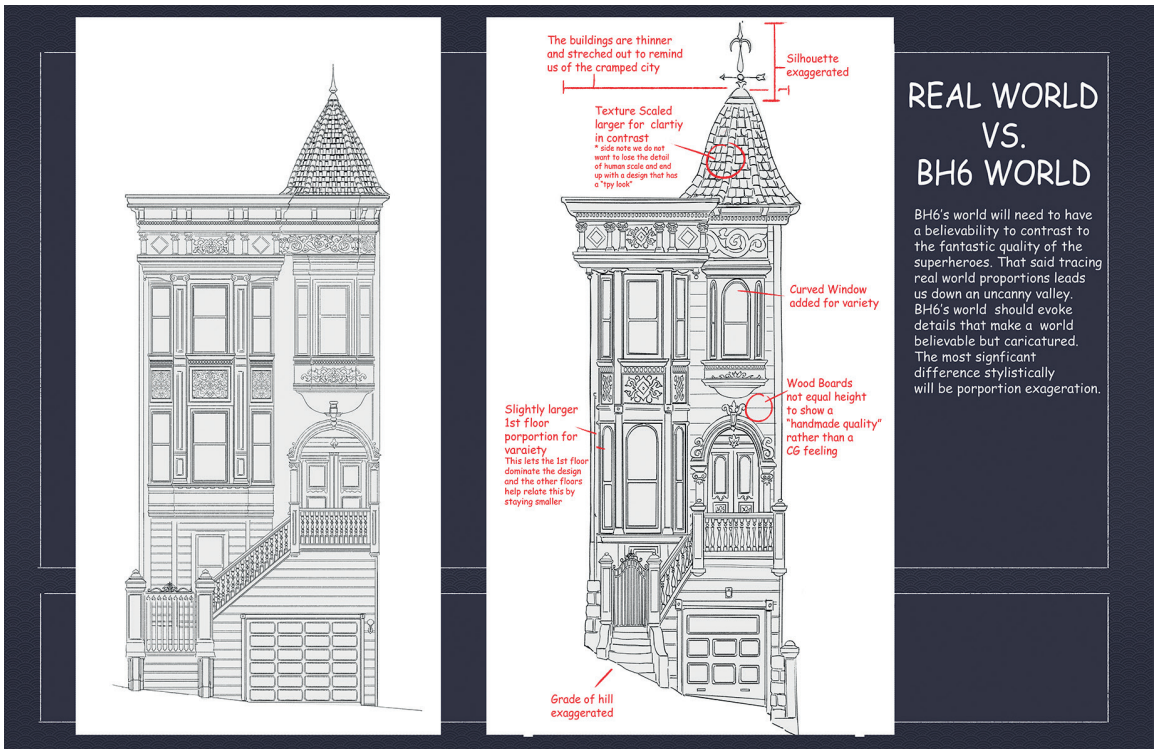
MARVEL COMICS TAKE PLACE IN THE REAL WORLD. DON, CHRIS, AND THEIR TEAM HAVE ELEGANTLY CREATED AN ENVIRONMENT THAT IS HYPER-REAL AND YET STILL IMMERSIVE.

JEPH LOEB, *HEAD OF TELEVISION, MARVEL ENTERTAINMENT*

FILM FRAME
PAGES 12–13: **PAUL FELIX** / DIGITAL

GREAT EXAMPLE OF MOOD AND CHARACTER WITHIN A GESTERAL SKETCH

101 DALMATIANS



SCOTT WATANABE / DIGITAL

WONKY PASS

• NO SHAPE CONTRAST - NO SENSE OF HISTORY • TOO PERFECT

VICTORIA YING / DIGITAL

DESIGN PASS

• SENSE OF "CHARACTER" & "LIVED IN" • SHAPES CONTRASTING

VICTORIA YING / DIGITAL

SAN FRANSOKYO

The idea to combine two iconic cities into one unique setting started with executive producer John Lasseter. "I challenged them to come up with something new and different, to find their own mythical city." The filmmakers agreed, but wanted to retain elements of the Japanese style, so director Don Hall began to think about a place he could blend with Tokyo in a fun, fresh way. "I chose San Francisco because Los Angeles didn't feel right, and New York is the epicenter of the Marvel comics world, which I wanted to move away from. San Francisco has so many distinctive features—the Golden Gate Bridge, the hills, the painted ladies, the cable cars—that when we mashed it up with Japanese aesthetics, it led to a lot of exciting possibilities. It was familiar but not the obvious choice."

To achieve the right look, production designer Paul Felix and a small team of visual development artists embarked on research trips to both Tokyo and San Francisco. Felix says, "You have to go to a place and feel it for yourself. Just the way spaces are arranged tells you a lot about a culture. Seeing a city firsthand gives you a breadth and richness that influences a design to be something new but also truly evoke a place's nature." The artists were awed by the sheer density of Tokyo, which they infused into San Fransokyo. "It was just metropolis as far as the eye could see, and teeming with people and buildings and signs. It was visual overload," says art director, environments, Scott Watanabe.

IT'S IMPORTANT FOR SAN FRANSOKYO TO FEEL LIKE THE RIGHT SIZE AND SCALE, BECAUSE IF IT FEELS TOY-LIKE IN ANY WAY IT UNDERCUTS THE SUPER HERO ASPECT. IT HAS TO FEEL LIVED-IN, LIKE THERE REALLY ARE A MILLION PEOPLE LIVING THERE.

PAUL FELIX, *PRODUCTION DESIGNER*

While in San Francisco, Felix noticed a particular quality of light that is unique to the city. "I felt if we could get that Bay Area light into San Fransokyo, it would be enough for me." Director of cinematography, lighting, Adolph Lusinsky, was equally struck by that luminance. "I don't know if it has to do with the winds constantly cleaning the air or if it's because a lot of light gets through the buildings, but San Francisco just has really cool lighting. We went to specific spots at specific times when events happen in the movie to try to capture it."

It was important to the directors that San Fransokyo be a place audiences would want to visit. "Ultimately we were trying to create a world you've never seen before," says Hall. "We wanted San Fransokyo to be a fun and cool world, so it would be worth the price of a ticket to experience a city that you couldn't visit anywhere other than in the movie theater. It's almost a character in the film."

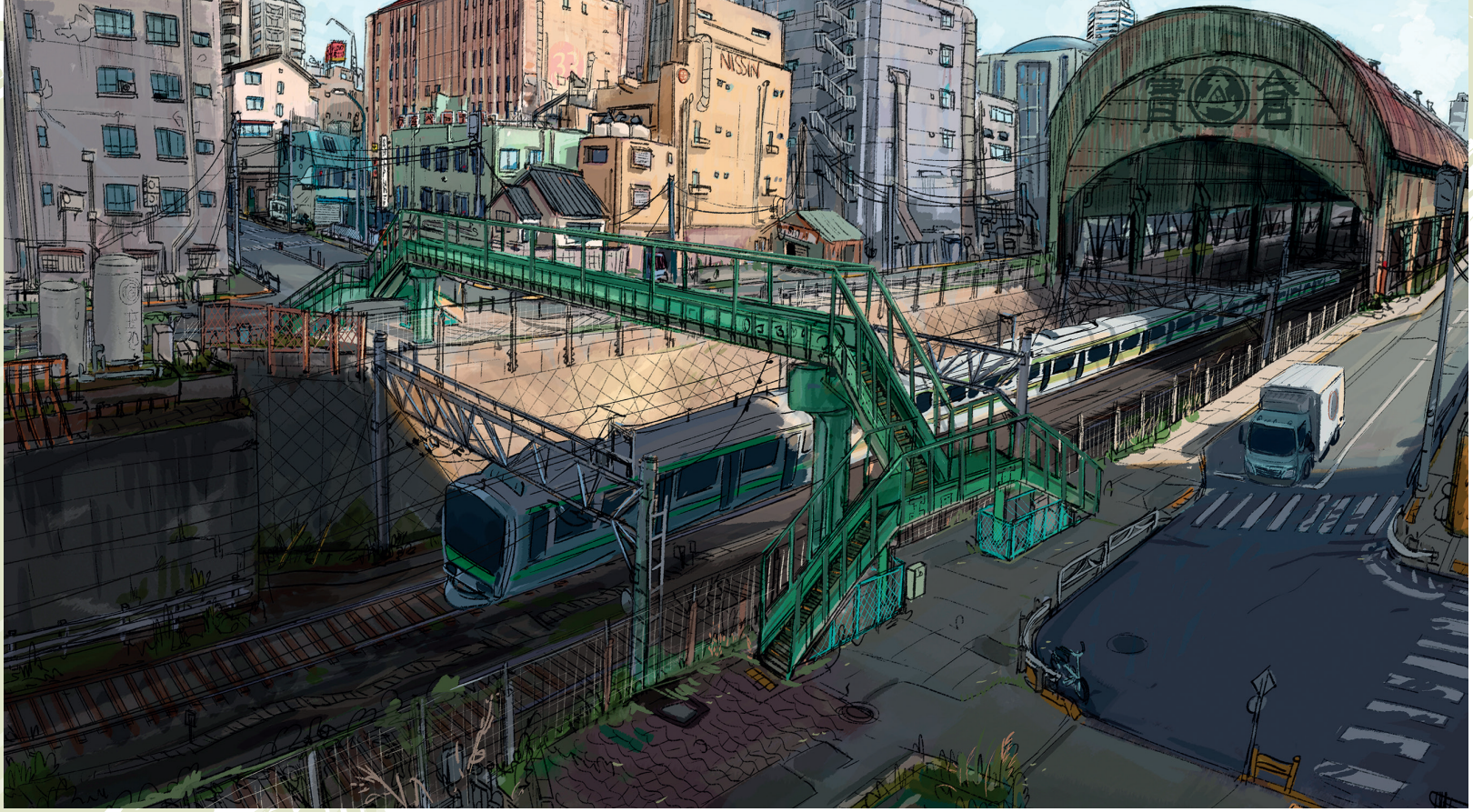
PAUL FELIX / DIGITAL

SCOTT WATANABE / DIGITAL

PAUL FELIX / DIGITAL

DON WANTED TO FIGURE OUT A LOGICAL EXPLANATION FOR HOW A MASH-UP CITY LIKE THIS COULD EXIST. I CAME UP WITH IDEA THAT, AFTER THE 1906 EARTHQUAKE IN SAN FRANCISCO, JAPANESE IMMIGRANTS REBUILT THE PLACE USING TECHNIQUES THAT ALLOW MOVEMENT AND FLEXIBILITY IN A SEISMIC EVENT.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS



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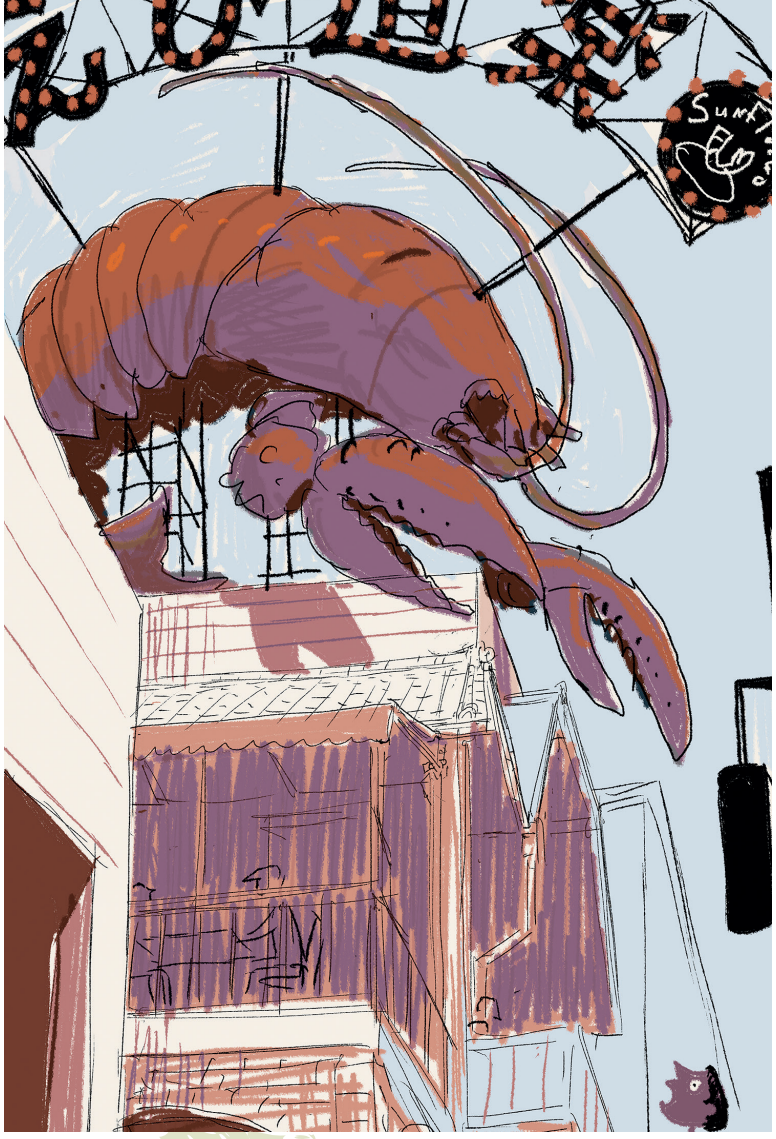
TADAHIRO UESUGI / DIGITAL



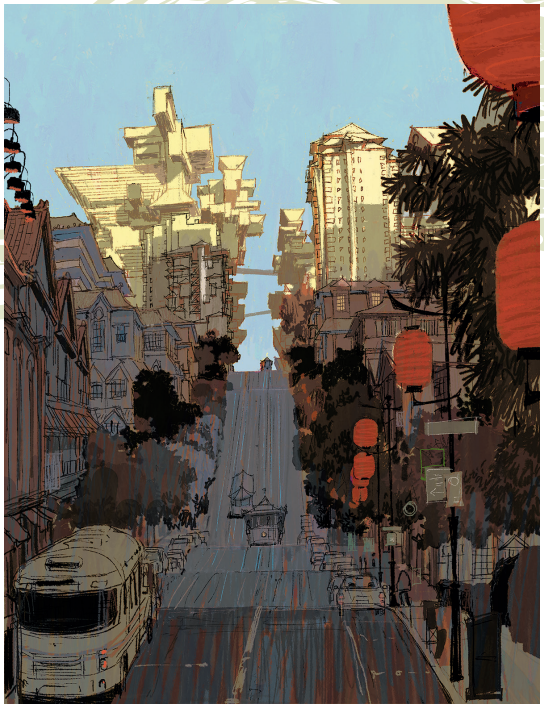
TADAHIRO UESUGI / DIGITAL

THE JAPANESE ILLUSTRATOR AND DESIGNER TADAHIRO UESUGI WAS REALLY INSPIRING. HIS EARLY WORK ON *BIG HERO 6* REALLY CAPTURED THE MOOD AND FEELING OF A JAPANESE SAN FRANCISCO.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

TADAHIRO UESUGI / DIGITAL

TADAHIRO UESUGI / DIGITAL



TADAHIRO UESUGI / DIGITAL

TADAHIRO UESUGI / DIGITAL

TADAHIRO UESUGI / DIGITAL

TADAHIRO UESUGI / DIGITAL

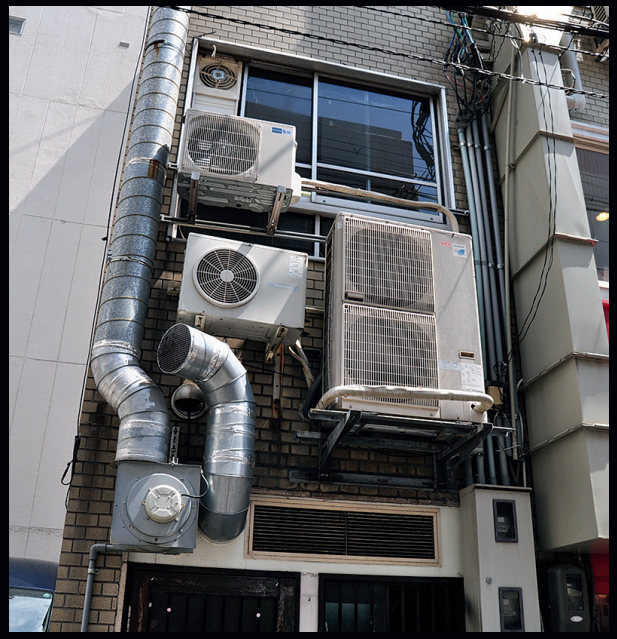
VICTORIA YING / DIGITAL

JEFF TURLEY / DIGITAL

JEFF TURLEY / DIGITAL

I'M FROM IOWA; I'M USED TO OUR FARM WHERE THE NEAREST NEIGHBOR IS A MILE AND A HALF AWAY. TOKYO IS THE EXACT OPPOSITE OF THAT, WITH A LOT OF PEOPLE CRAMMED INTO A VERY TIGHT URBAN ENVIRONMENT. BUT WALKING AROUND AT NIGHT, THERE WAS A SENSE OF PEACEFULNESS.

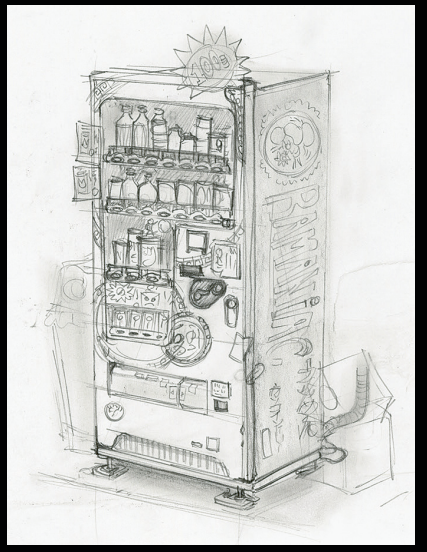
DON HALL, *DIRECTOR*



SCOTT WATANABE / PHOTOGRAPHS

I PUT VENDING MACHINES EVERYWHERE IN MY DRAWINGS, BECAUSE THEY ARE PART OF THE CULTURE IN TOKYO. EVERY TWO TO THREE BLOCKS, THERE'S A VENDING MACHINE OF SODA, FOOD, EVEN FRESH SUITS AND UNDERWEAR.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS



SCOTT WATANABE / PHOTOGRAPHS

SCOTT WATANABE / GRAPHITE

SAN FRANCISCO HAS A UNIQUE HERITAGE AND LOTS OF NATURAL BEAUTY. IT'S SURROUNDED BY THE OCEAN, THE FOG, THE HILLSIDES. GOLDEN GATE PARK IS SO BEAUTIFULLY DENSE IT ALMOST FEELS LIKE YOU'RE NOT IN A CITY ANYMORE. THERE'S AN IDYLLIC QUAINTNESS TO IT WE TRIED TO HOLD ONTO.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

SCOTT WATANABE / PHOTOGRAPHS

SCOTT WATANABE / PHOTOGRAPHS

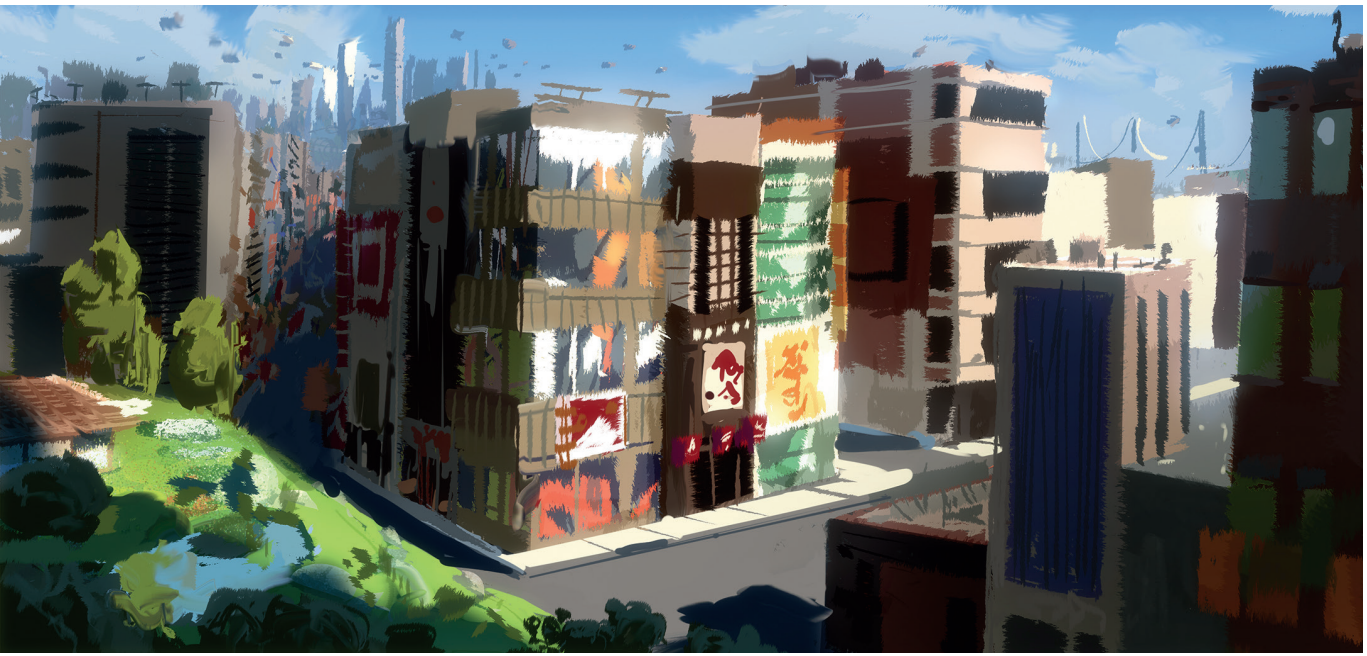
WE WENT TO THE ROOFTOP OF THE SECOND-TALLEST BUILDING IN SAN FRANCISCO AND PHOTOGRAPHED THE SKIES EVERY HALF HOUR. SAN FRANCISCO'S SKIES HAVE A UNIQUE LOOK BECAUSE OF THE WAY THE ATMOSPHERE SITS REALLY LOW TO THE WATER.

ADOLPH LUSINSKY,
DIRECTOR OF CINEMATOGRAPHY, LIGHTING

SCOTT WATANABE / DIGITAL

TO CREATE AN APPEALING WORLD THAT WAS A MASH-UP OF SAN FRANCISCO AND TOKYO, WE DECIDED TO USE THE GEOGRAPHY AND LANDMARKS OF SAN FRANCISCO BUT GIVE THEM A JAPANESE SPIN THROUGH THINGS LIKE THE ROOF SHAPES AND COLOR CHOICES.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

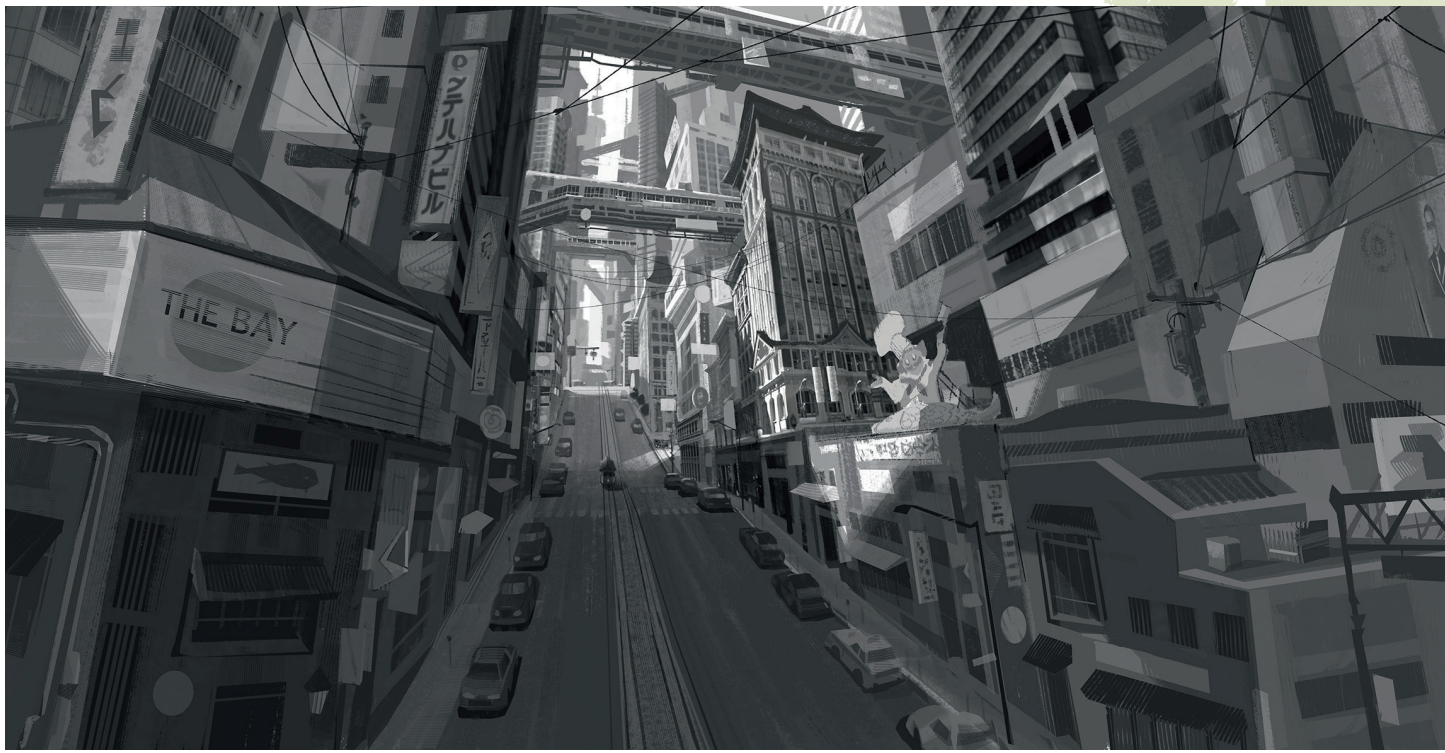


JEFF TURLEY / DIGITAL

WE STARTED WITH THE IDEA BEHIND THE OVERALL STYLE OF THE FILM. WE WANTED TO MAKE IT LOOK REALLY COOL. CONTEMPORARY, BUT BEAUTIFULLY AND CLEVERLY DESIGNED.

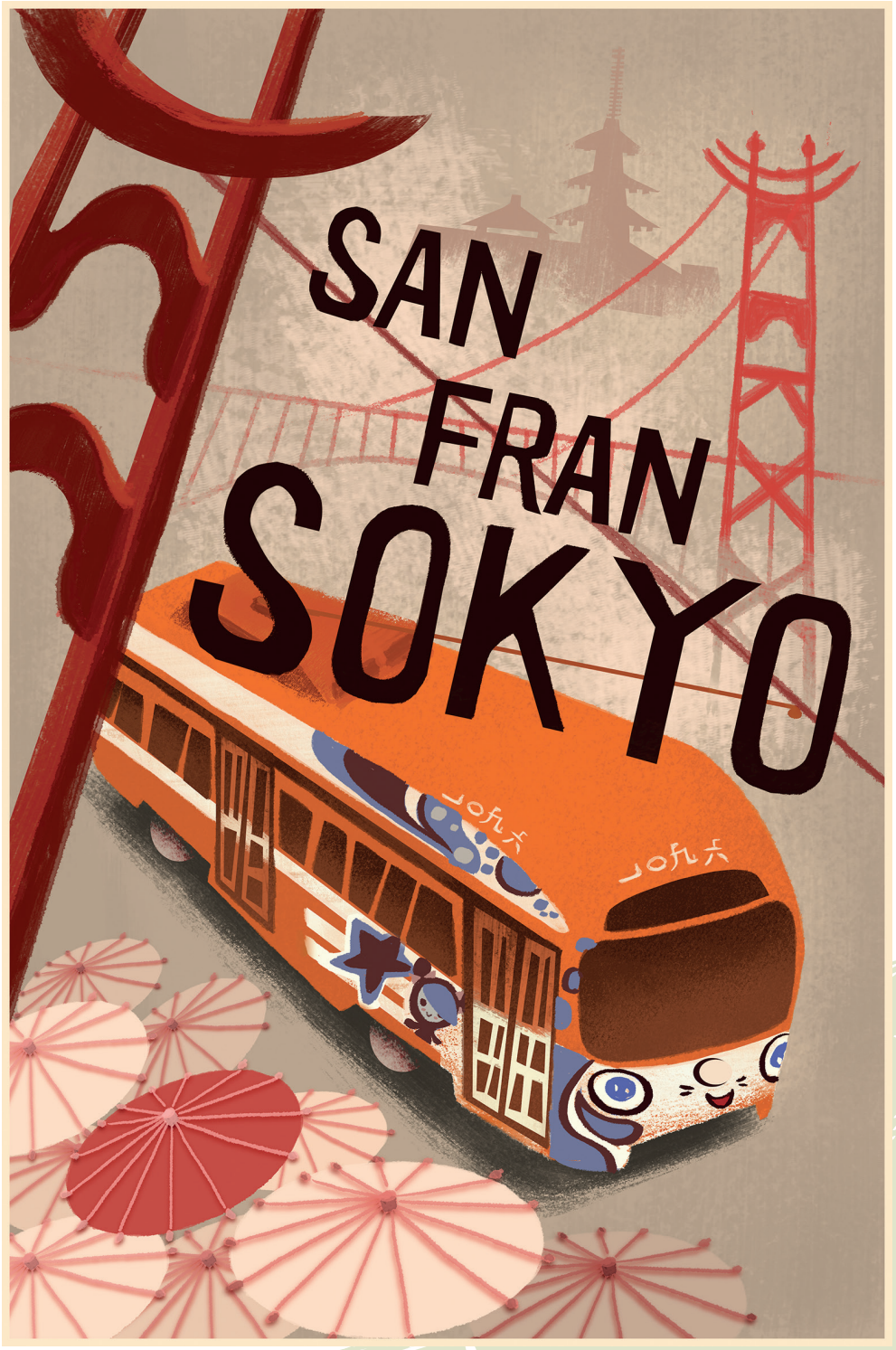
JOHN LASSETER,
EXECUTIVE PRODUCER

JEFF TURLEY / DIGITAL



JAMES FINCH / DIGITAL

LORELAY BOVE / DIGITAL



LORELAY BOVE / DIGITAL

WE WANTED THE NUMBER OF SIGNS AND THEIR DESIGNS TO FEEL PARTICULARLY JAPANESE. WE CREATED OVER TWO HUNDRED SIGNS, BUT MANY DIDN'T READ PROPERLY BECAUSE THE KANJI SYMBOLS WERE PLACED IN WEIRD LOCATIONS OR THE WORDING WAS WRONG. WE TRIED TO CATCH THOSE MISTAKES.

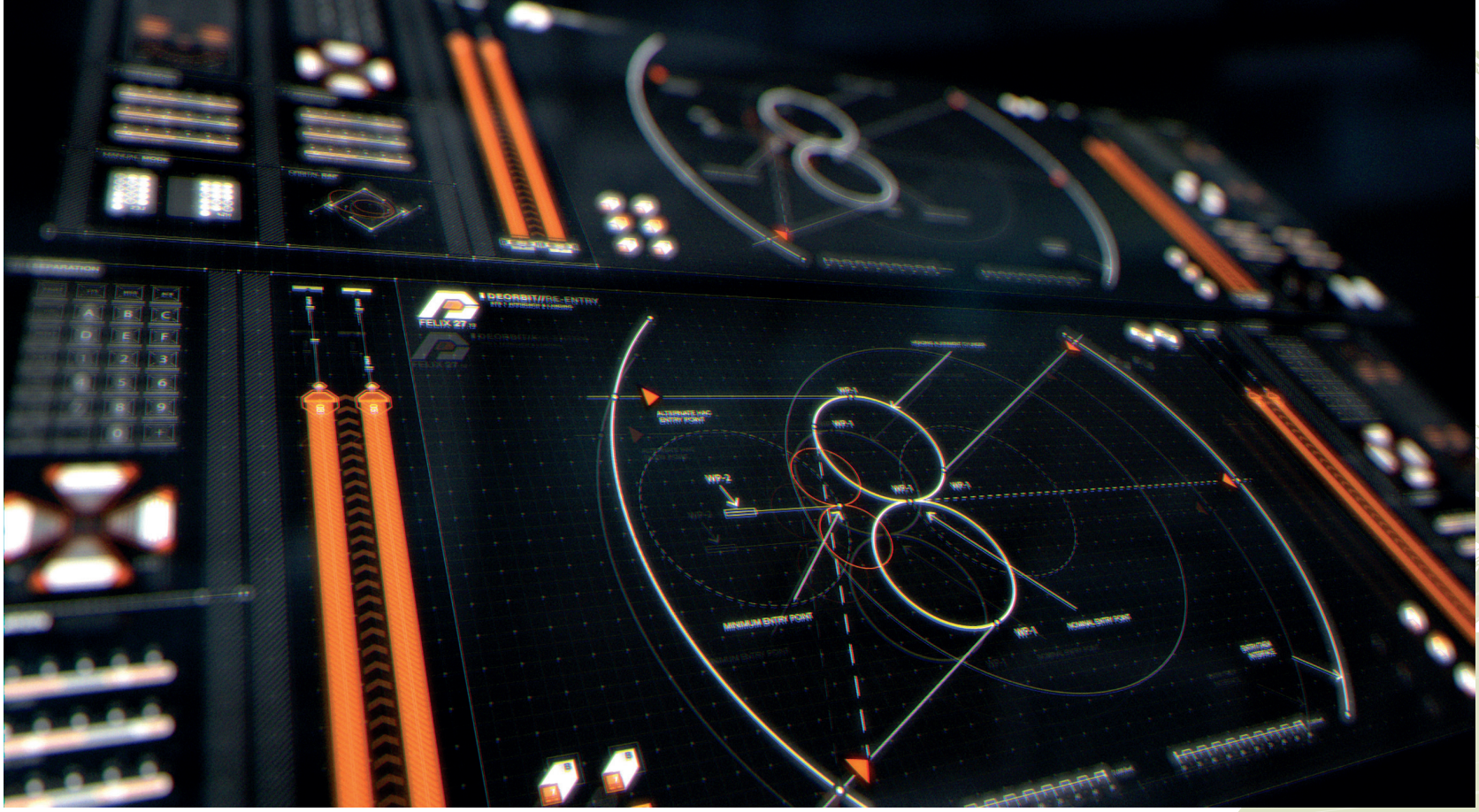
PAUL FELIX, *PRODUCTION DESIGNER*

MAC GEORGE / DIGITAL

MAC GEORGE / DIGITAL

MARTY BAUMANN / DIGITAL

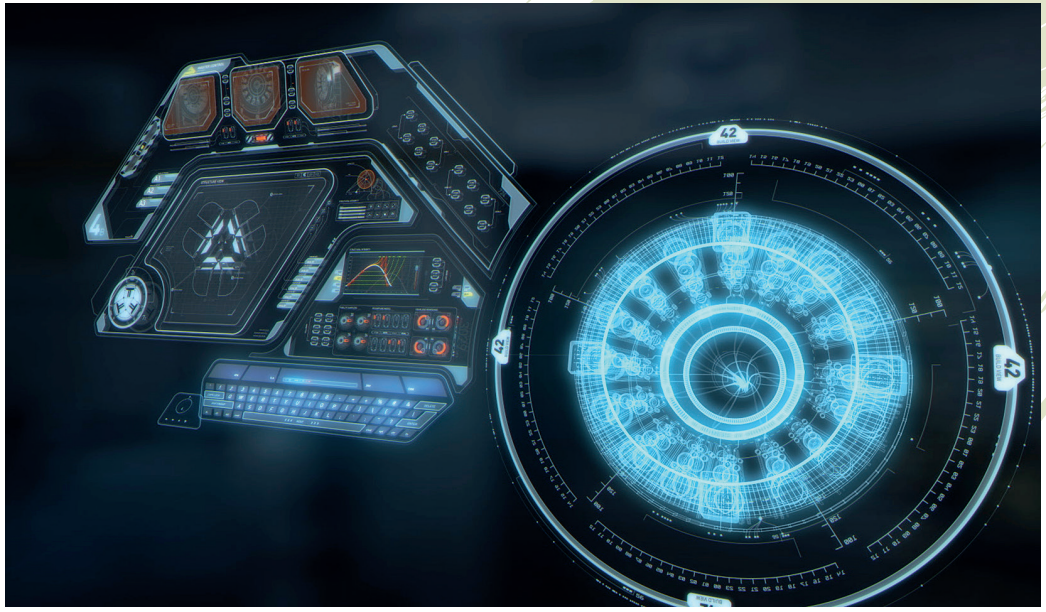
MAC GEORGE / DIGITAL



JAYSE HANSON / DIGITAL

EACH PIECE OF TECHNOLOGY WE DESIGNED HAS ITS OWN FEEL, DEPENDING ON ITS PURPOSE. THE SCREENS IN THE ROBOTICS LAB ARE MORE INFORMATION-PACKED THAN THOSE IN THE MILITARY LAB, WHICH ARE A LOT MORE MINIMALIST.

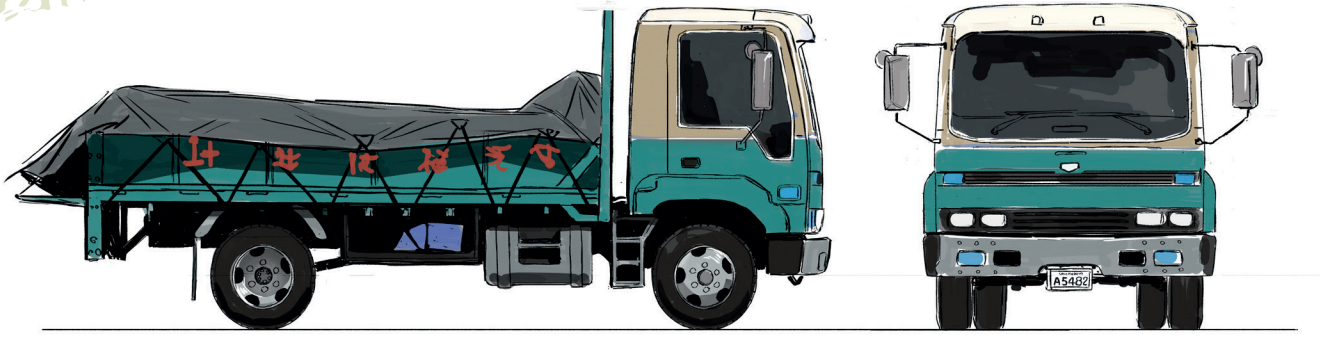
PAUL FELIX, *PRODUCTION DESIGNER*

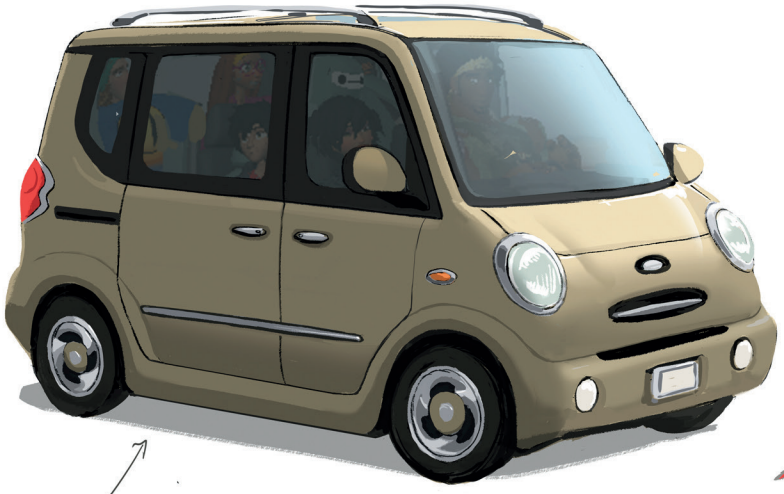


JAYSE HANSON / DIGITAL

IN ORDER TO DRAW ATTENTION TO THE "FUN" CARS I WAS DESIGNING, I HAD TO DESIGN CARS THAT ARE BORING, SO THAT EVEN WHEN YOU LOOK RIGHT AT THEM, YOUR EYES CAN'T HELP BUT SLIDE OFF, AND YOU'RE NOT DISTRACTED BY THEM.

KEVIN NELSON,
VISUAL DEVELOPMENT ARTIST





final exterior color is white

RAVE

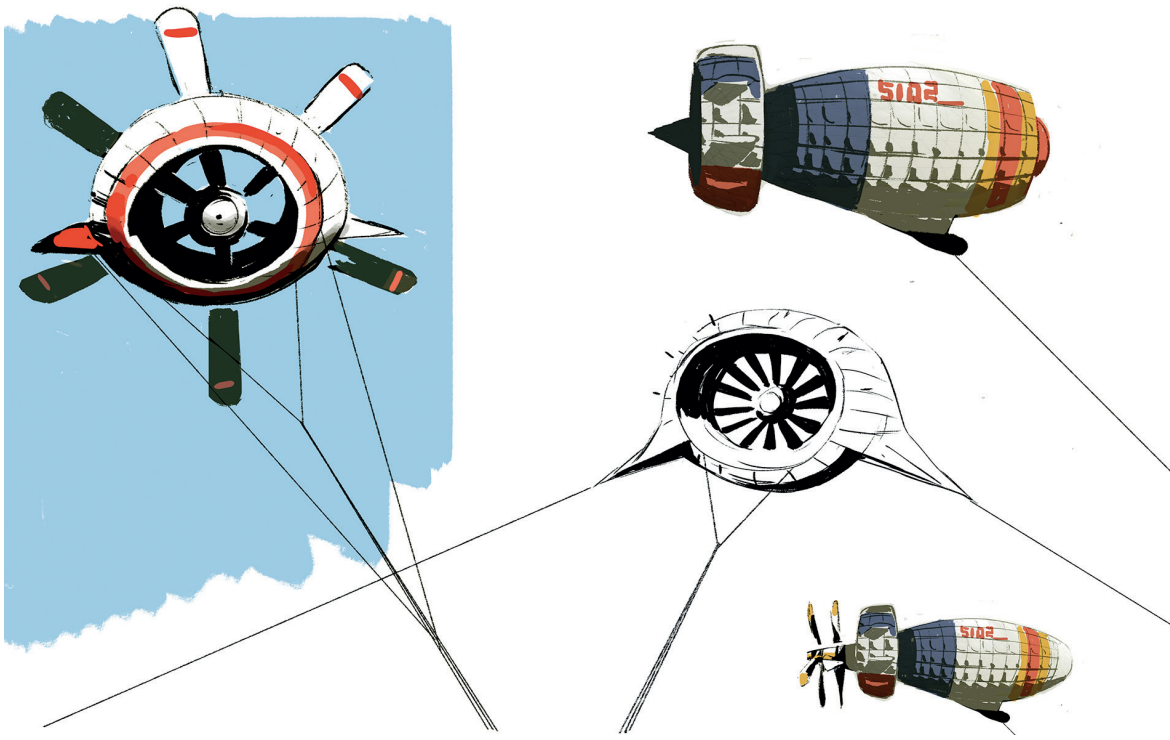
handbrake

KEVIN NELSON / DIGITAL

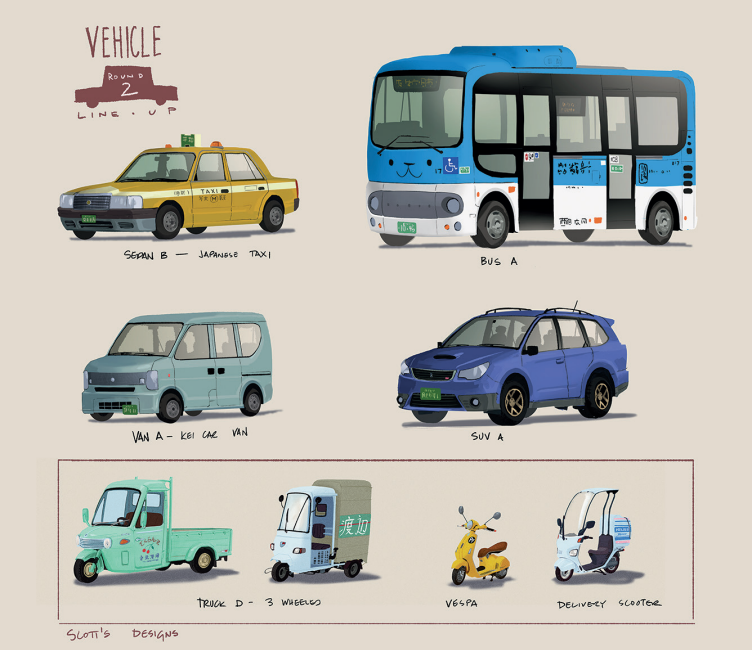
KEVIN NELSON / DIGITAL

INSPIRED BY JAPANESE KITE FIGHTS, THE TURBINES ARE GRAPHICS IN THE AIR, WHICH BAYMAX CAN FLY AROUND AND AGAINST. AND SAN FRANCISCO IS ON THE WINDY SIDE, SO THEY GAVE US A CHANCE TO DEPICT THE WIND.

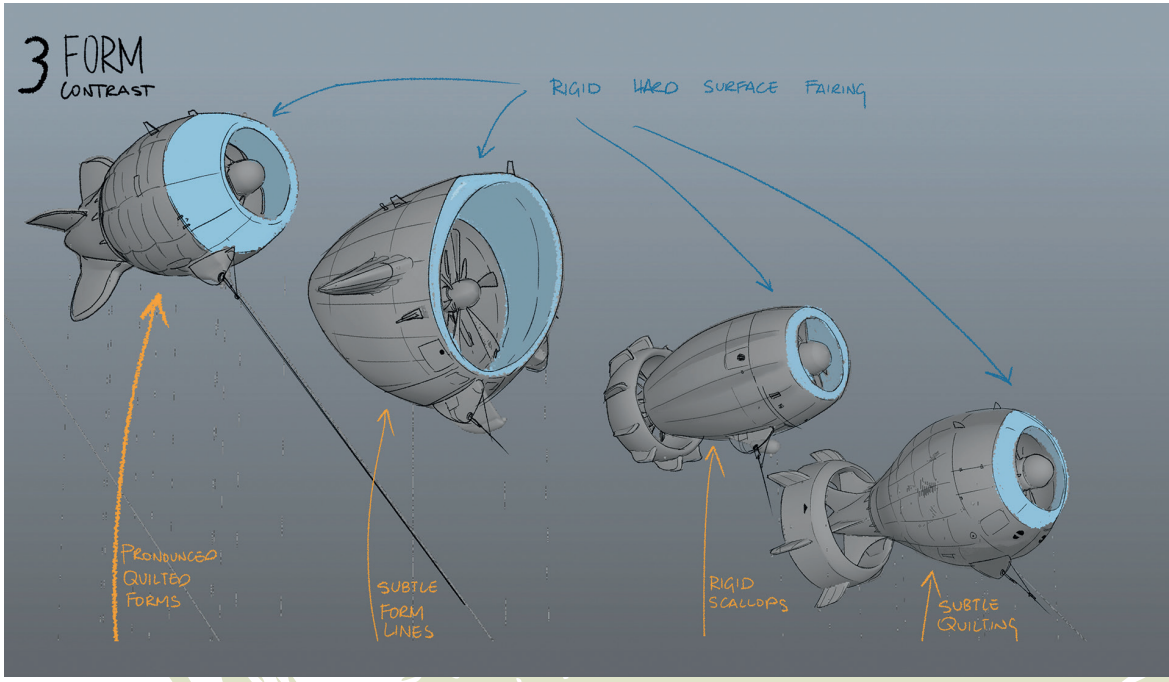
KEVIN NELSON,
VISUAL DEVELOPMENT ARTIST



KEVIN NELSON / DIGITAL



MIKE YAMADA, SCOTT WATANABE / DIGITAL



MIKE YAMADA / DIGITAL

HIRO'S FAMILY HOME

San Francisco is known for its Victorian-style houses. So for Hiro's family home, says art director, environments, Scott Watanabe, "Don wanted a Queen Anne Victorian, with a bakery or a café beneath it. That was the first thing I drew; and, through all the changes to the interior, the exterior stayed pretty true to that drawing."

"For the original layout, I researched extensively how old Victorians were built and would have been remodeled," Watanabe says. But there was one structural feature that eluded him. "The witch's hat, which is the peak of the tower over Hiro's bedroom, is a distinct visual element in many of these houses. Figuring out how those roof beams were constructed was hugely difficult. It took months of trial and error to make my sketches actually work for the model and get that one piece to fit right." Watanabe laughs. "I hope no one looks at them, because there's probably a major structural point where it would have collapsed by now. Hopefully it will look believable enough that no one will question it."

SCOTT WATANABE / DIGITAL

SCOTT WATANABE / DIGITAL

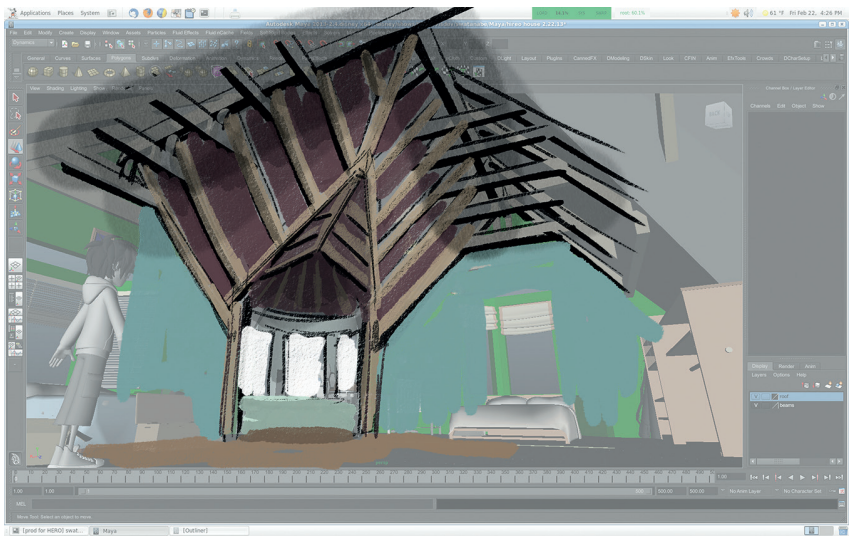
CARE GOES INTO EVERY SINGLE ASPECT OF A DESIGN. FOR EXAMPLE, THE DECK ON THE SECOND FLOOR USED TO PLAY A BIG ROLE IN THE STORY, BECAUSE THAT'S HOW HIRO AND BAYMAX WOULD SNEAK IN AND OUT OF THE HOUSE. IT'S VERY ELABORATE BUT YOU NEVER ACTUALLY SEE IT IN THE FILM.

PAUL FELIX, *PRODUCTION DESIGNER*

SCOTT WATANABE / DIGITAL

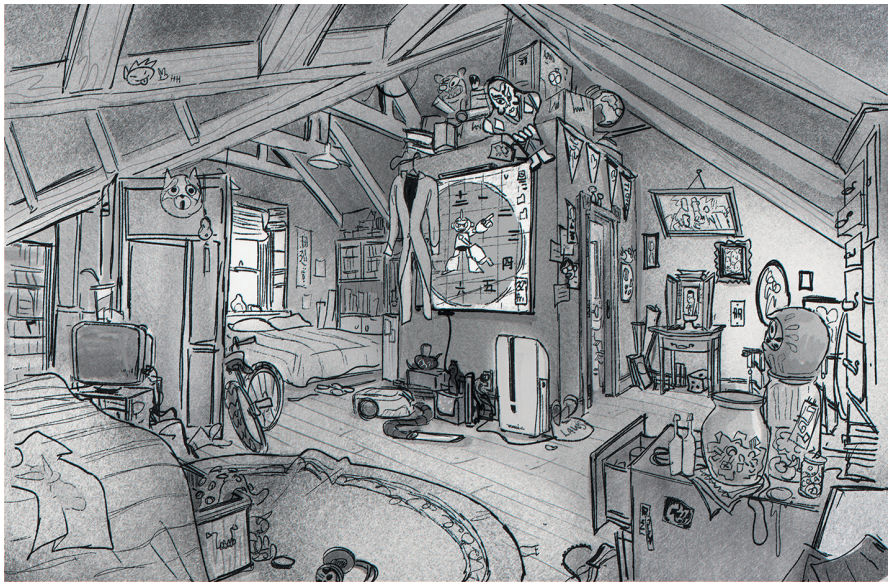
SCOTT WATANABE / DIGITAL

SCOTT WATANABE / DIGITAL



THE SPECIFIC DETAILS OF AN ENVIRONMENT HELP GIVE YOU A SENSE OF THE CHARACTER WHOSE SPACE IT IS. HIRO'S BEDROOM REFLECTS THE KIND OF PERSON HE IS AND HIS RELATIONSHIP WITH TADASHI.

PAUL FELIX, *PRODUCTION DESIGNER*



SCOTT WATANABE / DIGITAL

TADASHI IS SUCH A NICE OLDER BROTHER THAT HE'S LET HIRO PUSH HIM INTO A TIGHT LITTLE CORNER, WHILE HIRO'S HORRIBLE MESS OF CREATIVITY GROWS LIKE MOLD AND SPREADS OUT EVERYWHERE.

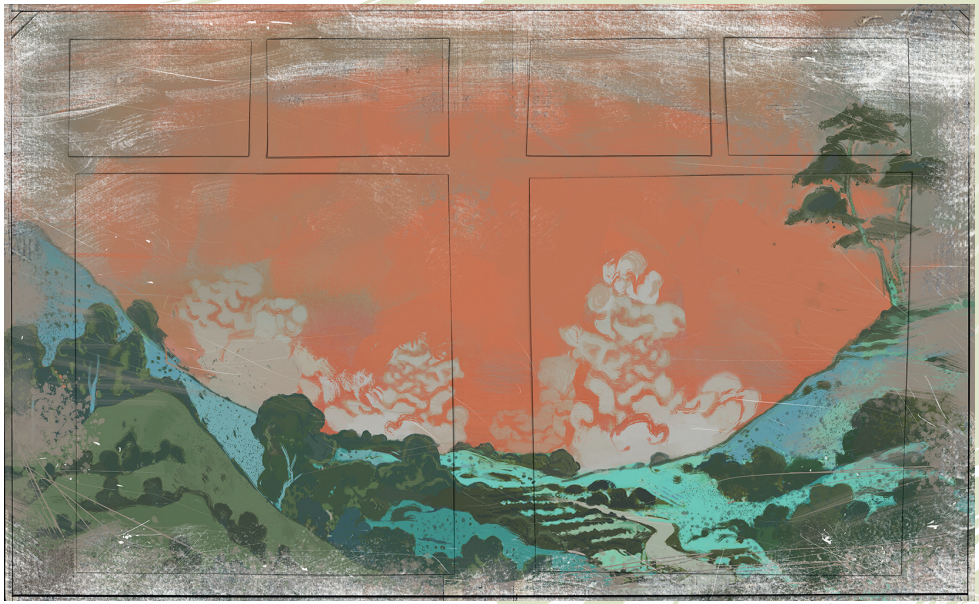
SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

SCOTT WATANABE / DIGITAL

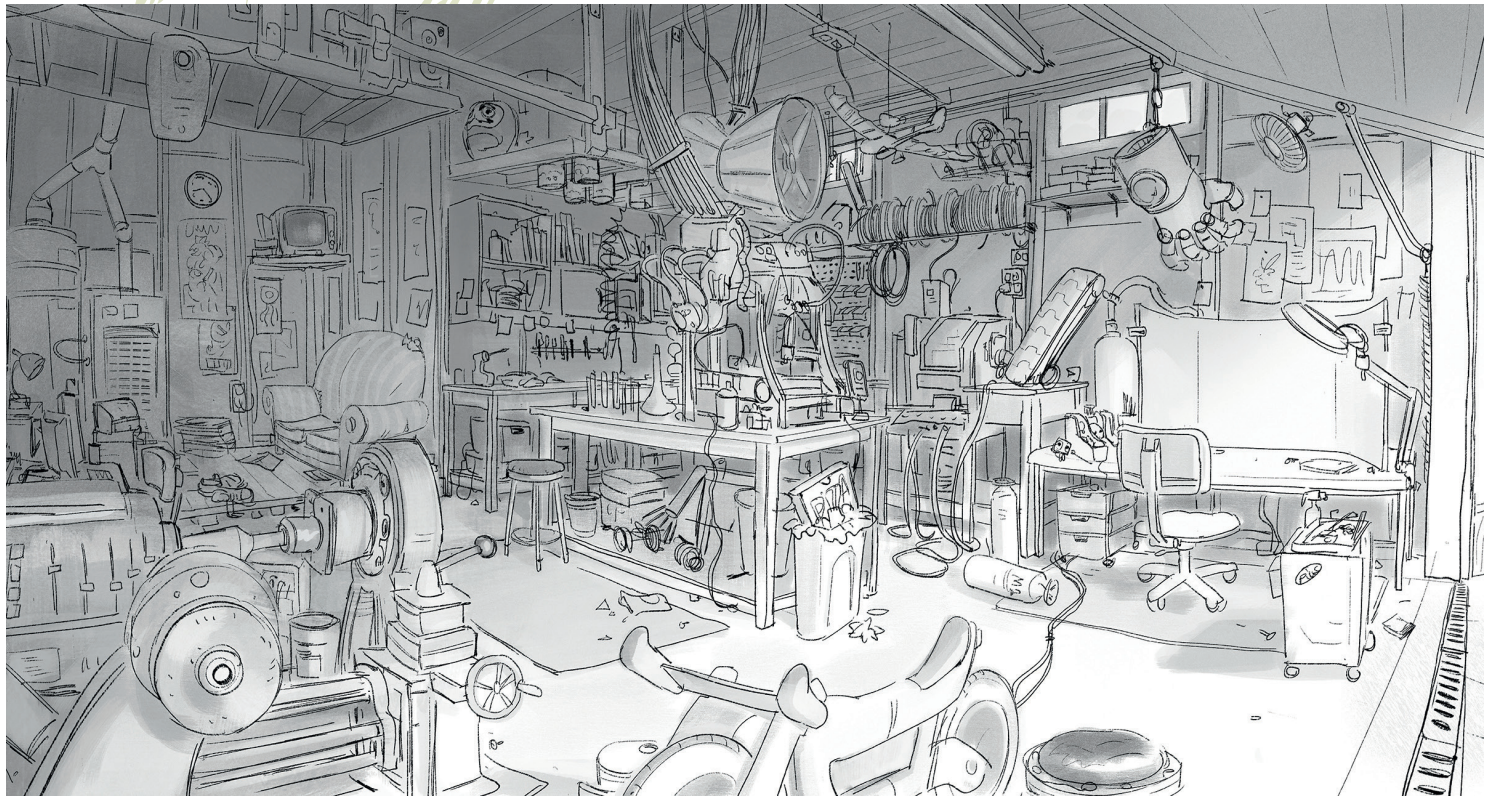
VICTORIA YING / DIGITAL

THE TEAM BUILDS THEIR EXPO PROJECTS IN THE HAMADA GARAGE, WHICH HAS BEEN RE-PURPOSED INTO A MAKESHIFT TECH LAB. IT'S FULL OF FUN MATERIALS THEY CAN DIY INTO ANYTHING, BUT ALSO STILL FEELS LIKE A GARAGE–THERE'S STORAGE AND A WATER HEATER TANK.

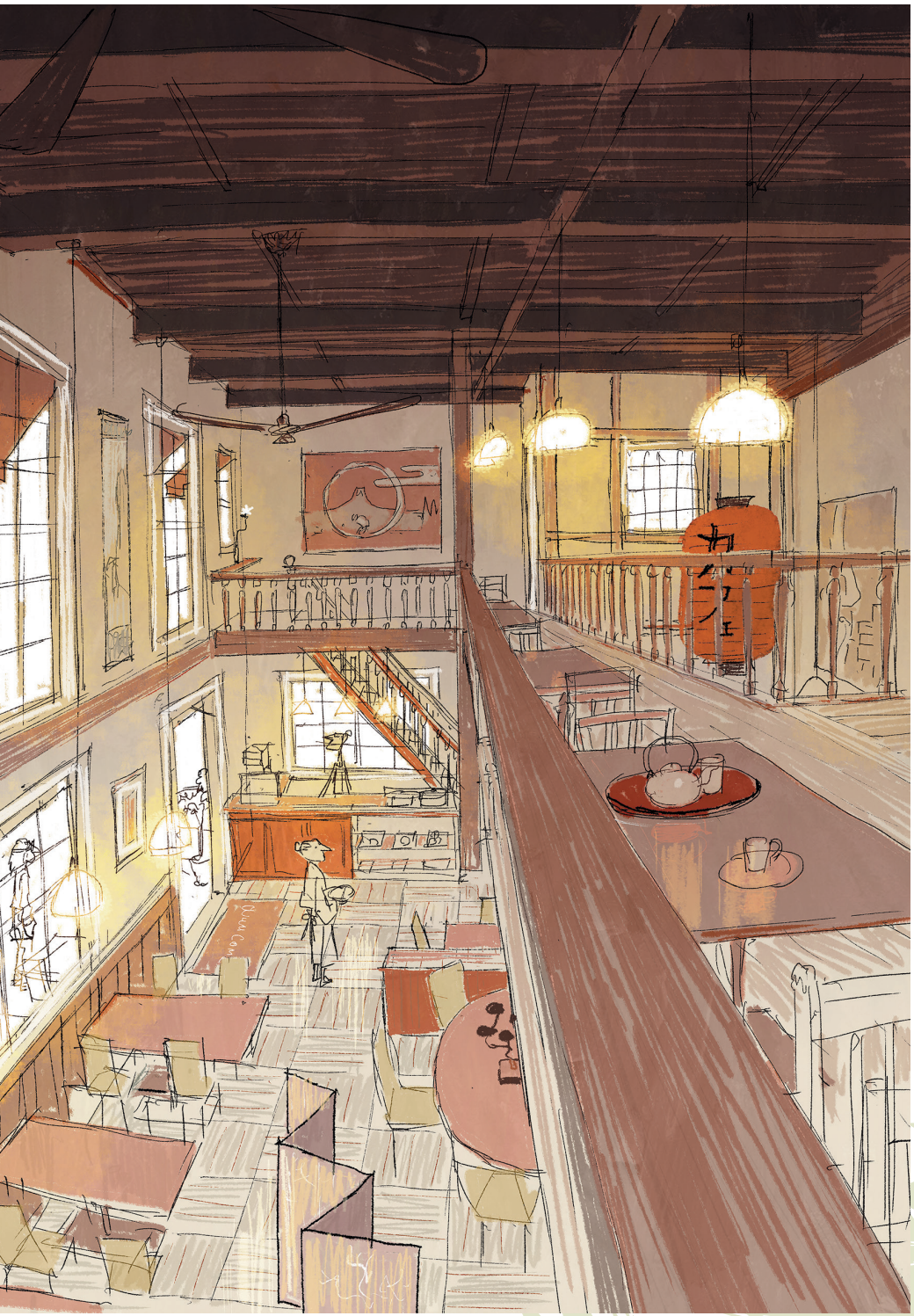
SCOTT WATANABE, *ART DIRECTOR, ENVIRONMENTS*



VICTORIA YING / DIGITAL



SCOTT WATANABE / DIGITAL

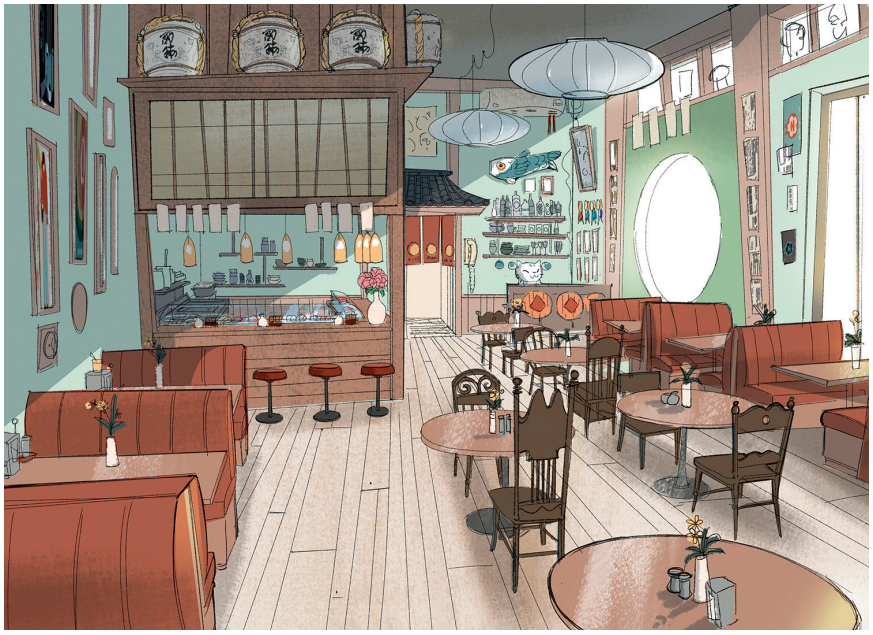


TADAHIRO UESUGI / DIGITAL

VICTORIA YING / DIGITAL

THE CAFÉ REFLECTS AUNT CASS'S CHARACTER. IT HAS A NEWER STYLE WITH NATURAL MATERIALS, LOTS OF WOOD, WHICH FEELS VERY JAPANESE. IT'S BEEN THROUGH MULTIPLE OWNERS, WHICH GIVES IT SOME HISTORY AND BELIEVABILITY THAT IT'S BEEN THERE SINCE THE EARLY 1900S.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

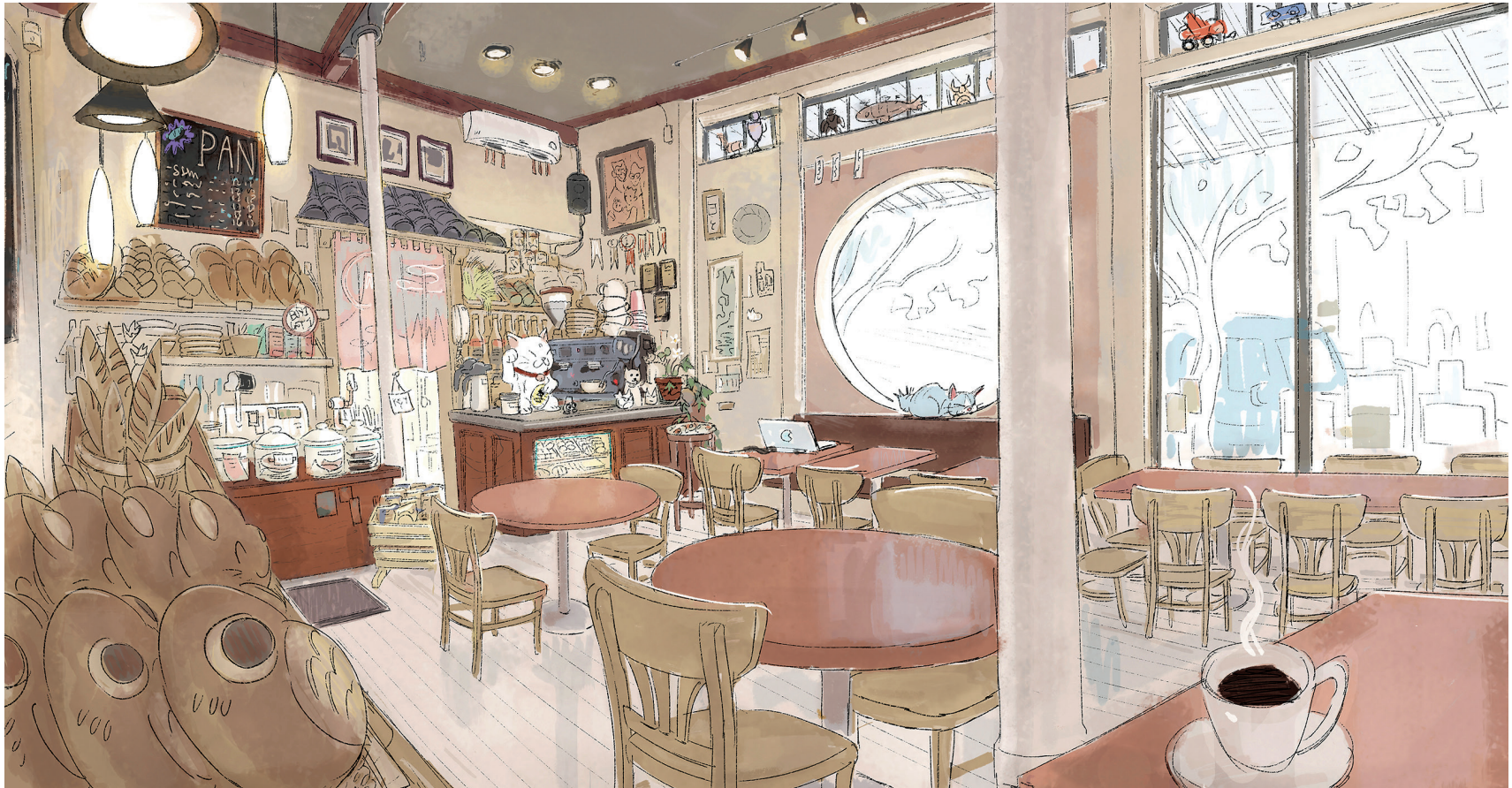


VICTORIA YING / DIGITAL

EARLY ON, THE CAFÉ WAS GOING TO BE A BAKERY, SO I DID A LOT OF RESEARCH ON JAPANESE BAKED GOODS. THEY HAVE A CHOW-MEIN HOT DOG CALLED *YAKISOBA-PAN*, WHICH IS NOODLES IN A BUN. THEY ALSO HAVE A VERY SPECIFIC CURRY THAT THEY PUT INSIDE BREAD AND FRY CALLED *CURRY PAN*. IT'S ABSOLUTELY DELICIOUS BUT IT'S SAVORY, NOT SWEET.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

SCOTT WATANABE / DIGITAL

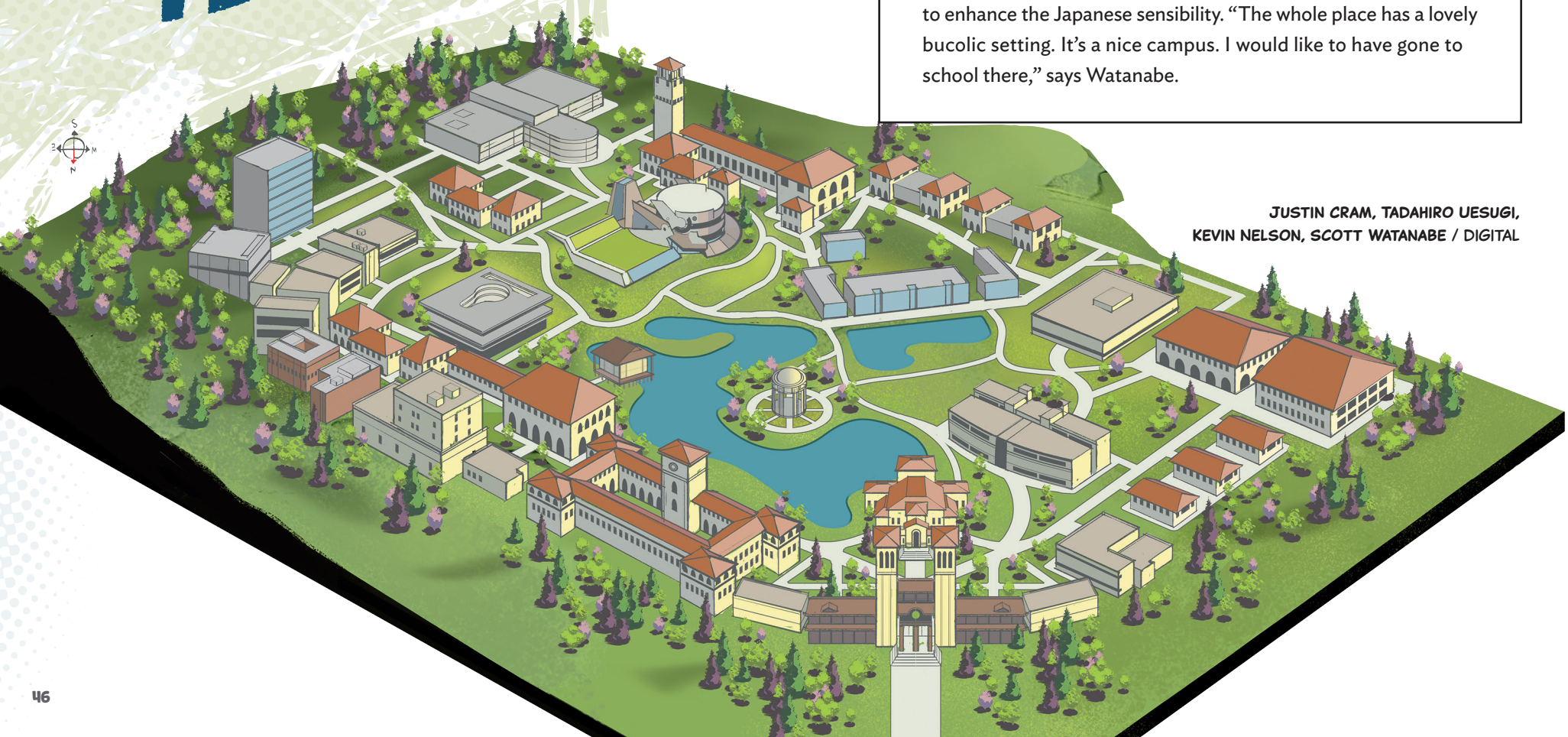


SAN FRANSOKYO INSTITUTE OF TECHNOLOGY

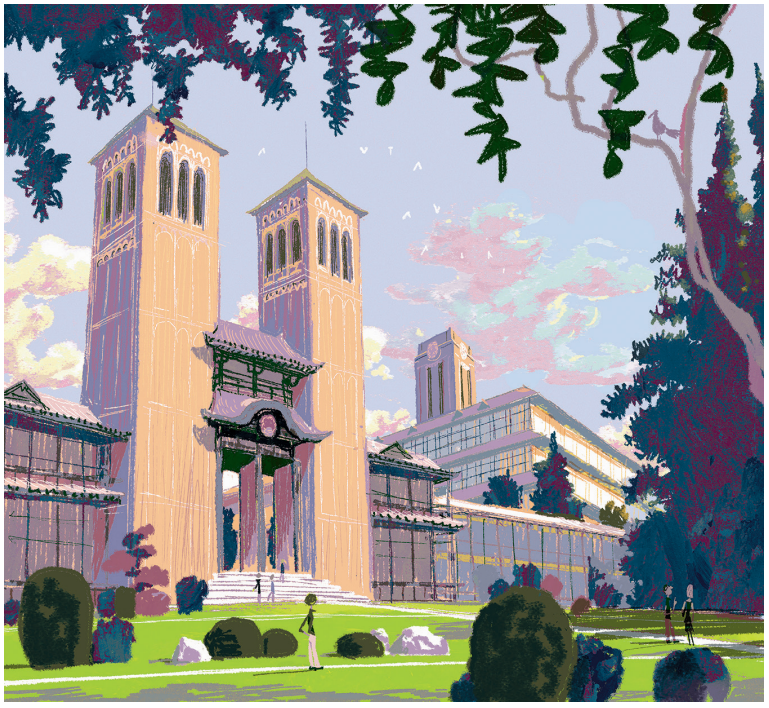
For the location of San Fransokyo Institute of Technology, where Hiro aspires to become a student of robotics like his brother Tadashi, Watanabe suggested an area of San Francisco that actually exists, the Presidio, because of its college-like atmosphere. Inspired by sketches that illustrator Tadahiro Uesugi had made early on, the design of the university began to emerge.

To give the university the feeling that its campus was originally from the early twentieth century, says production designer Paul Felix, "We mixed the Japanese aesthetic with architectural styles that were popular at the time, like Mission Revival. Then we juxtaposed it with really cutting-edge design for the modern buildings, to make a mélange that would be different from the structures you see elsewhere. You get the feeling that there's history built up since it began, with buildings from the 1940s, '50s, '60s."

The artists peppered the grounds with cherry-blossom trees to enhance the Japanese sensibility. "The whole place has a lovely bucolic setting. It's a nice campus. I would like to have gone to school there," says Watanabe.



JUSTIN CRAM, TADAHIRO UESUGI, KEVIN NELSON, SCOTT WATANABE / DIGITAL



TADAHIRO UESUGI / DIGITAL

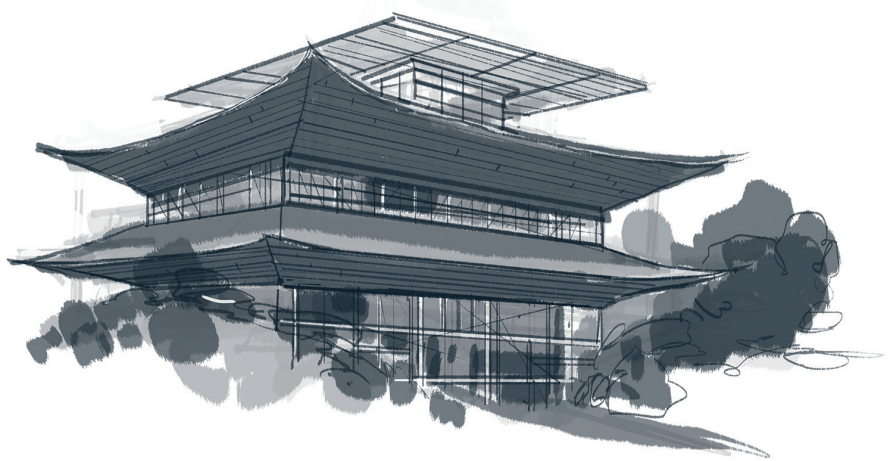
SCOTT WATANABE / DIGITAL

ARMAND SERRANO / DIGITAL

PAUL FELIX / DIGITAL

I DID AN EARLY CONCEPT DESIGN OF THE EXPO HALL THAT I THOUGHT WAS AN APPEALING MIX OF EAST AND WEST. BUT IT LOOKED LIKE A MAJOR ARCHITECTURAL STATEMENT, NOT AN EXHIBITION HALL. LASSETER INSISTED WE RESEARCH HOW THOSE ARE BUILT AND HOW FUNCTION DICTATES ITS FORM. HE ASKED US TO REFLECT ON THE STRUCTURE, INSTEAD OF JUST COMING UP WITH A COOL SHAPE AND TRYING TO FIT AN IDEA ONTO IT. THAT BECAME A WAY OF THINKING FOR THIS FILM.

PAUL FELIX, *PRODUCTION DESIGNER*

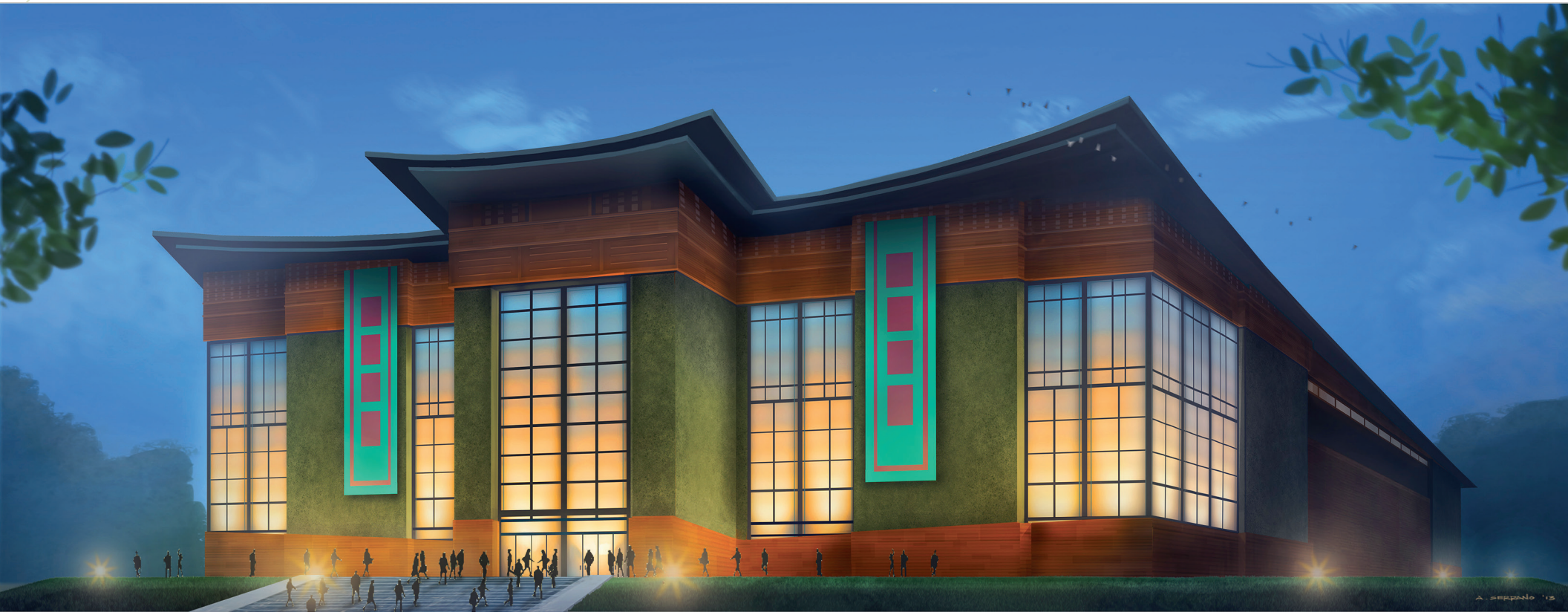


PAUL FELIX / DIGITAL

WE WENT WITH A VERY MINIMAL AESTHETIC USING NATURAL MATERIALS OF WOOD AND STONE, WHICH IS A VERY OLD-SCHOOL JAPANESE STYLE. THE INTERIOR SPACE WAS FORMALLY DESIGNED SO IT WAS NOT JUST A TYPICAL ROOM-SHAPED BOX.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

ARMAND SERRANO / DIGITAL

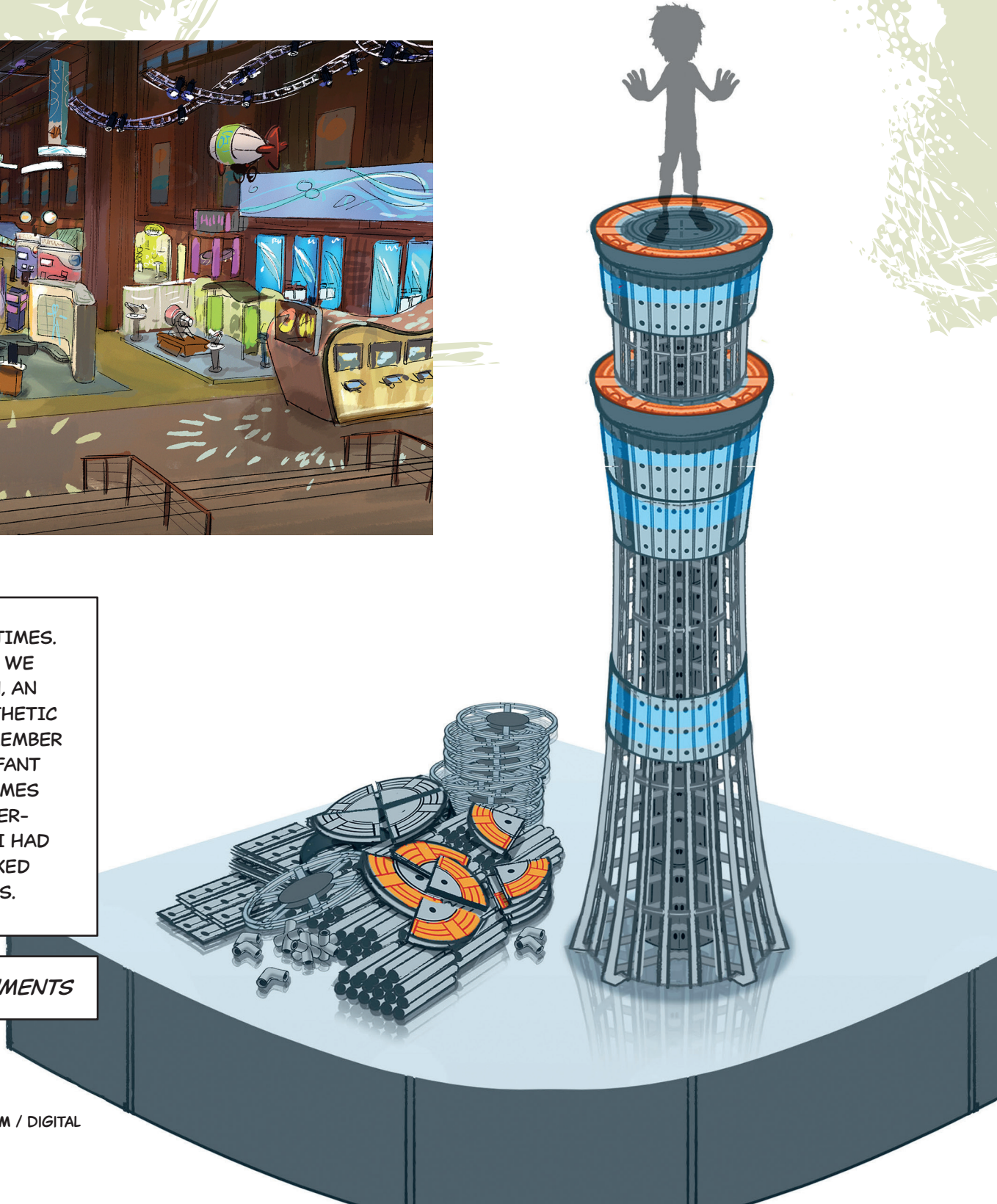


ARMAND SERRANO / DIGITAL

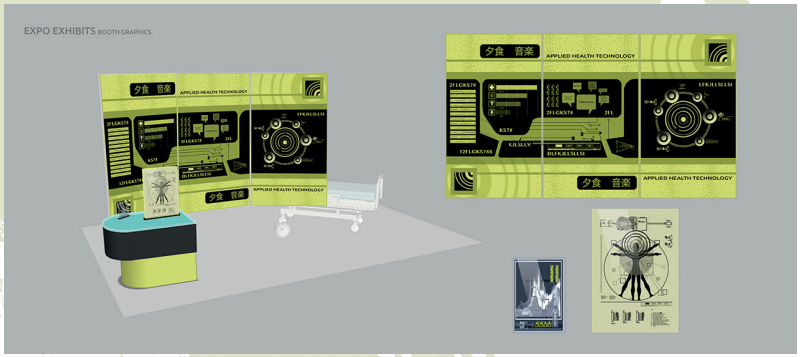
SCOTT WATANABE / DIGITAL

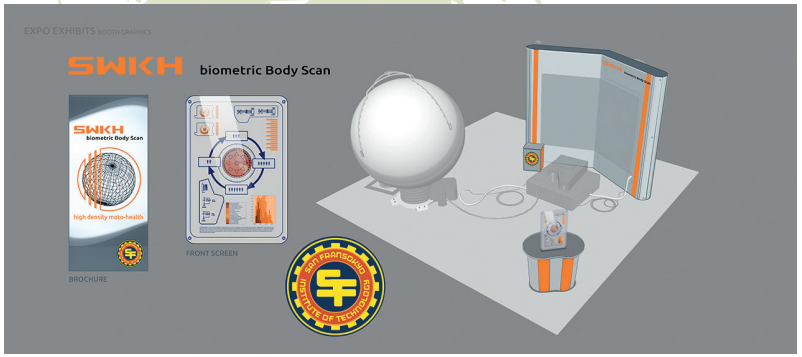
THE EXPO HALL BOOTHS CHANGED SEVERAL TIMES. INITIALLY IT WAS A BIO-MEDICAL FAIR, SO WE HAD THINGS LIKE A HYDROTHERAPY BOOTH, AN ELLIPTICAL MACHINE IN WATER, AND A PROSTHETIC LEG FOR ROCK CLIMBING. LATER EACH TEAM MEMBER HAD A BOOTH THAT SHOWCASED, IN ITS INFANT STAGE, THE TECHNOLOGY THAT LATER BECOMES THEIR SUPERPOWER—GO GO HAD HER SUPER-FAST BIKE WITH MAGNETIC WHEELS, WASABI HAD DISINFECTANT GLOVES, HONEY LEMON MIXED CHEMICALS THAT HARDENED INTO THINGS.

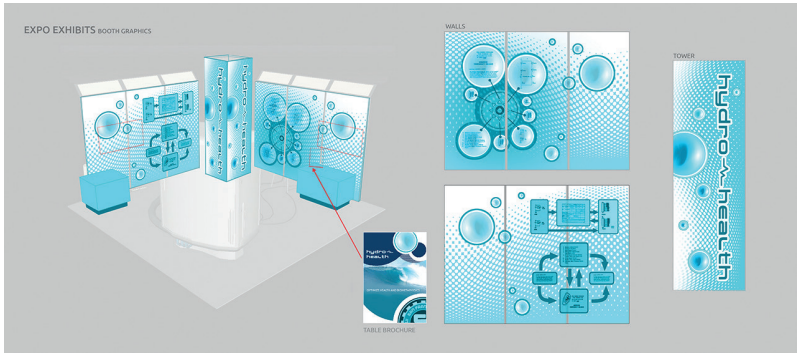
SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

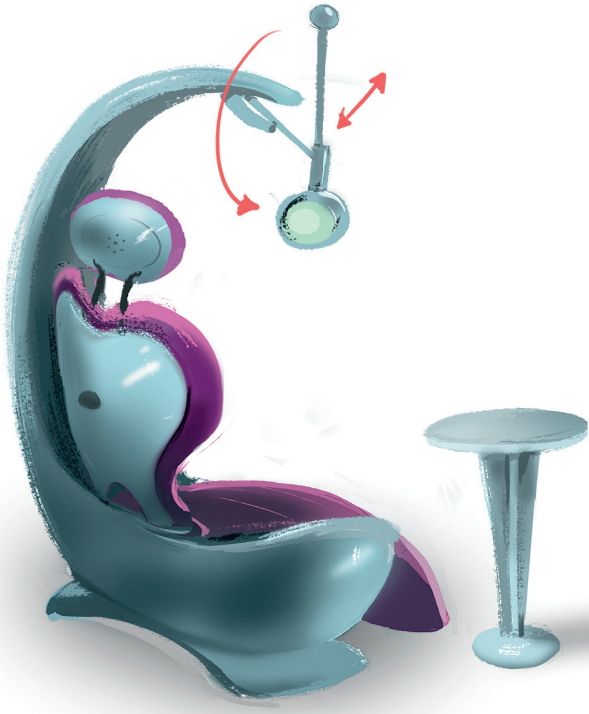


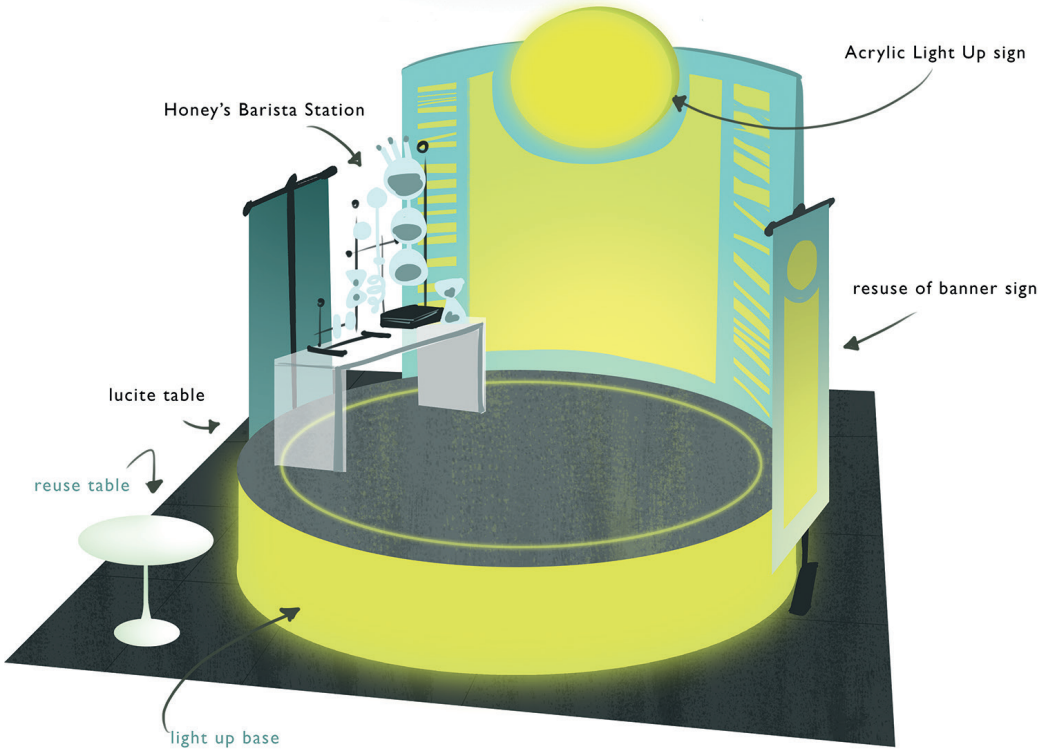
JUSTIN CRAM / DIGITAL





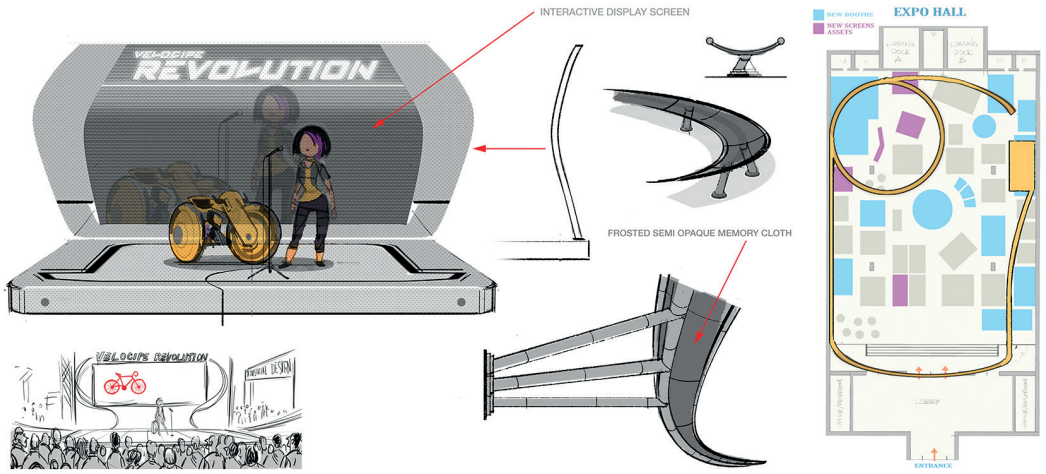






JUSTIN CRAM / DIGITAL

VICTORIA YING / DIGITAL



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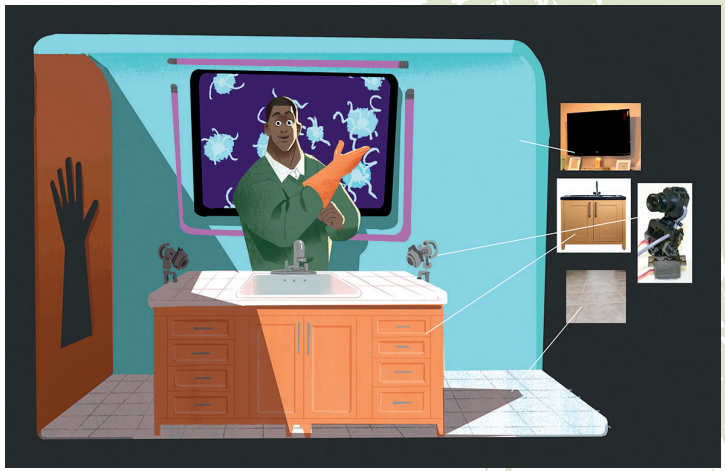
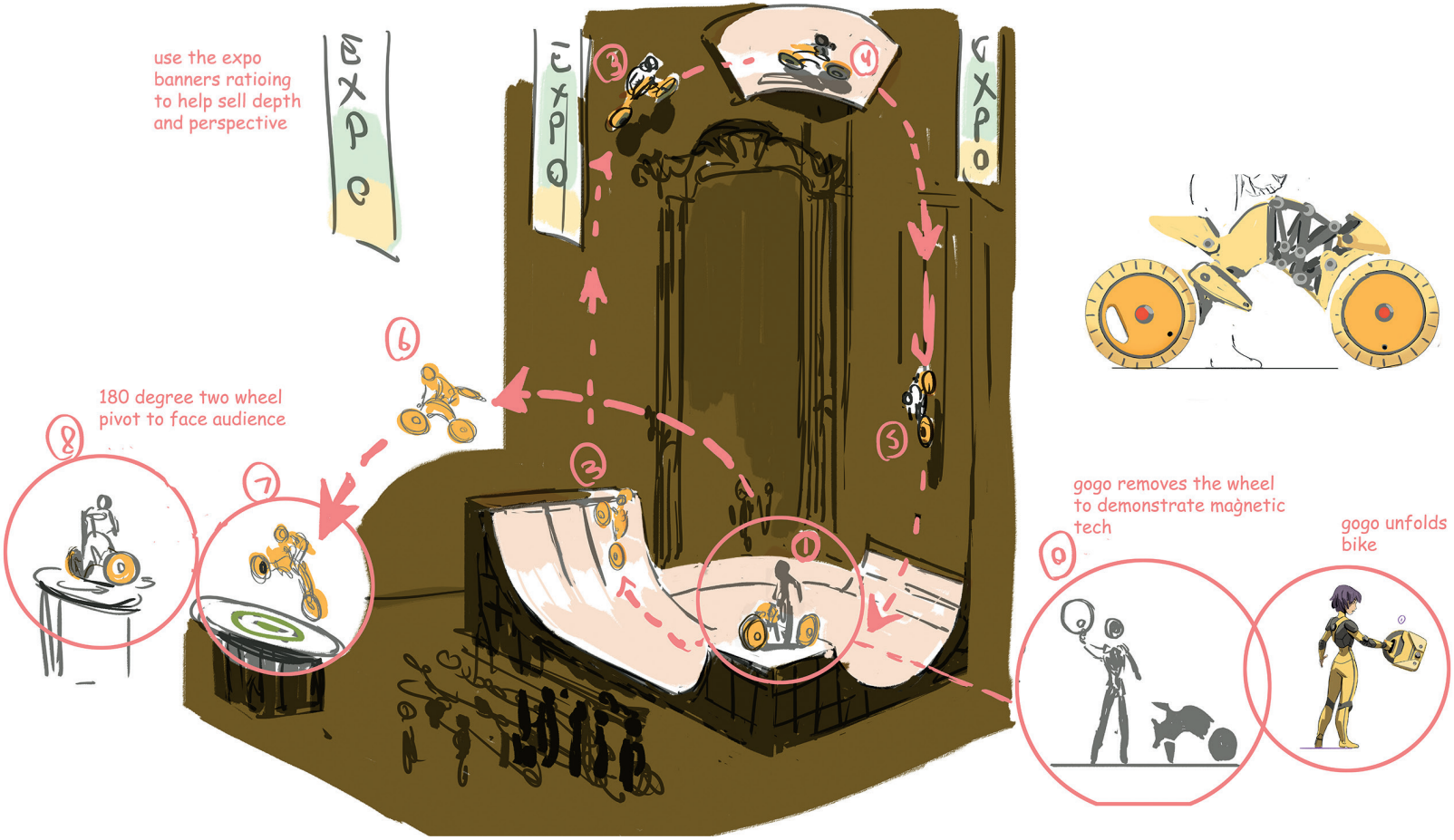
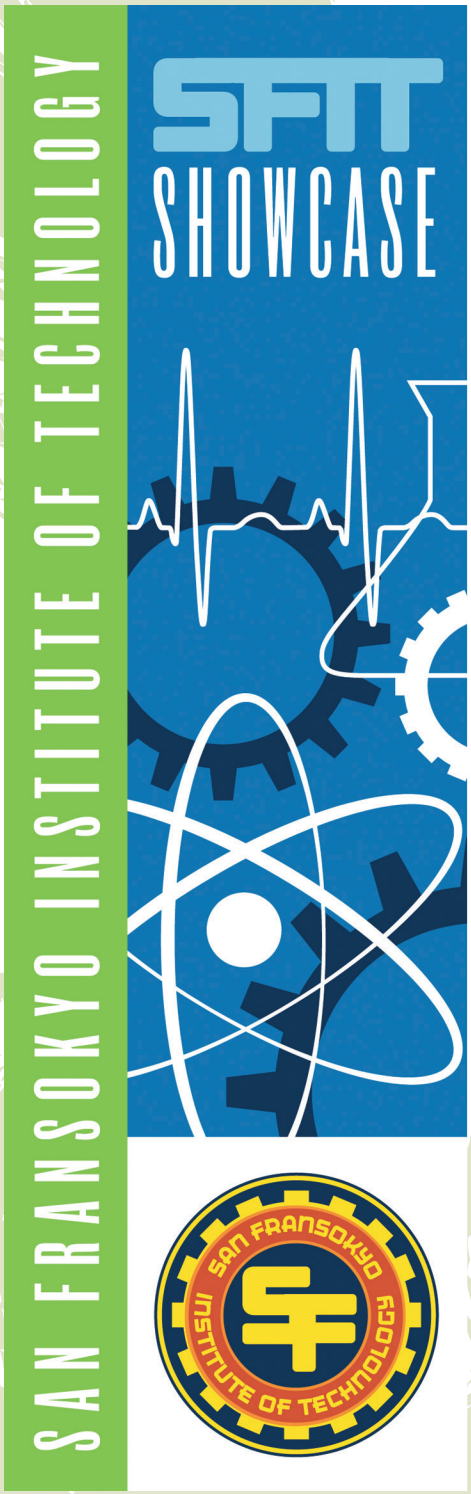
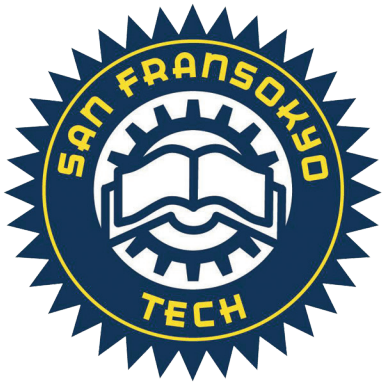


VICTORIA YING / DIGITAL



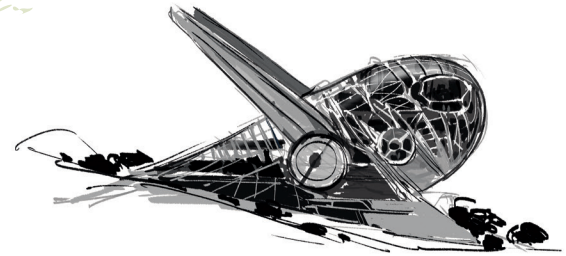
KEVIN NELSON / DIGITAL

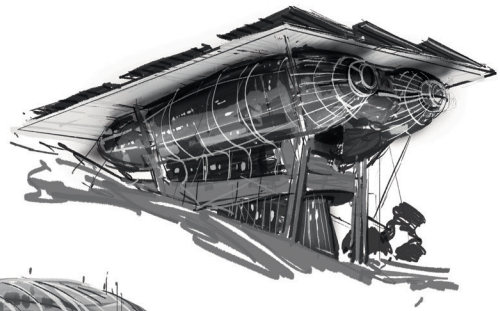


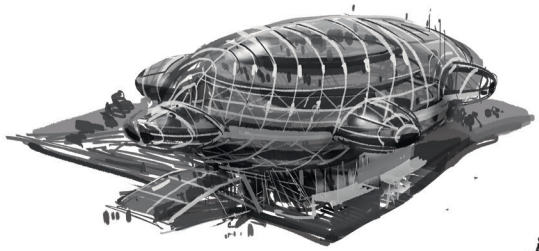


MARTY BAUMANN / DIGITAL

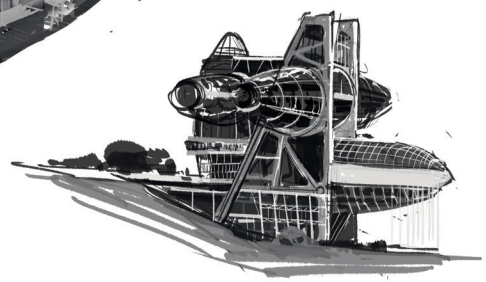
KEVIN NELSON / DIGITAL

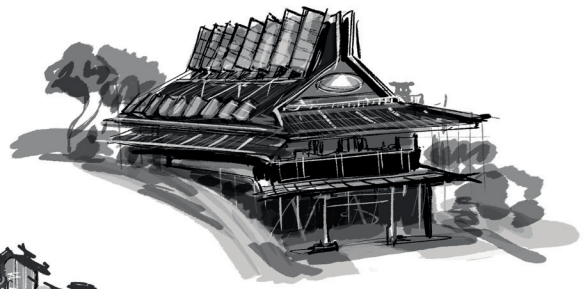


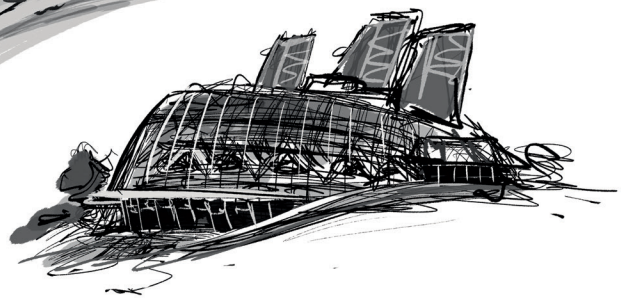


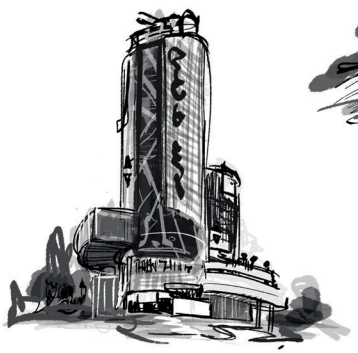


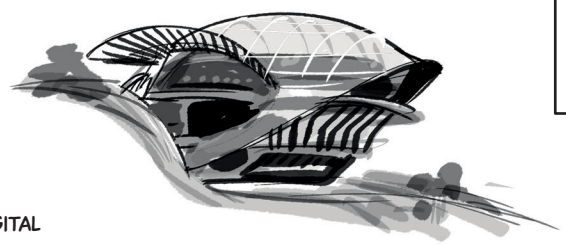
PAUL FELIX / DIGITAL











SCOTT WATANABE / DIGITAL

WE ATTEMPTED A ROBOT THEME WITH MANY VARIATIONS, LIKE SOLAR PANELS, FINS, HEADS. BUT IT DIDN'T LOOK LIKE A BUILDING ANYMORE, IT BECAME AN ABSTRACT IDEA. WE HAD TO FIND THE RIGHT MIX OF ARCHITECTURE THAT MADE FOR AN EXCITING DESIGN, BUT NOT PUSH IT SO FAR THAT IT LOOKED LIKE A SPACESHIP OR SOMETHING FROM *STAR TREK*.

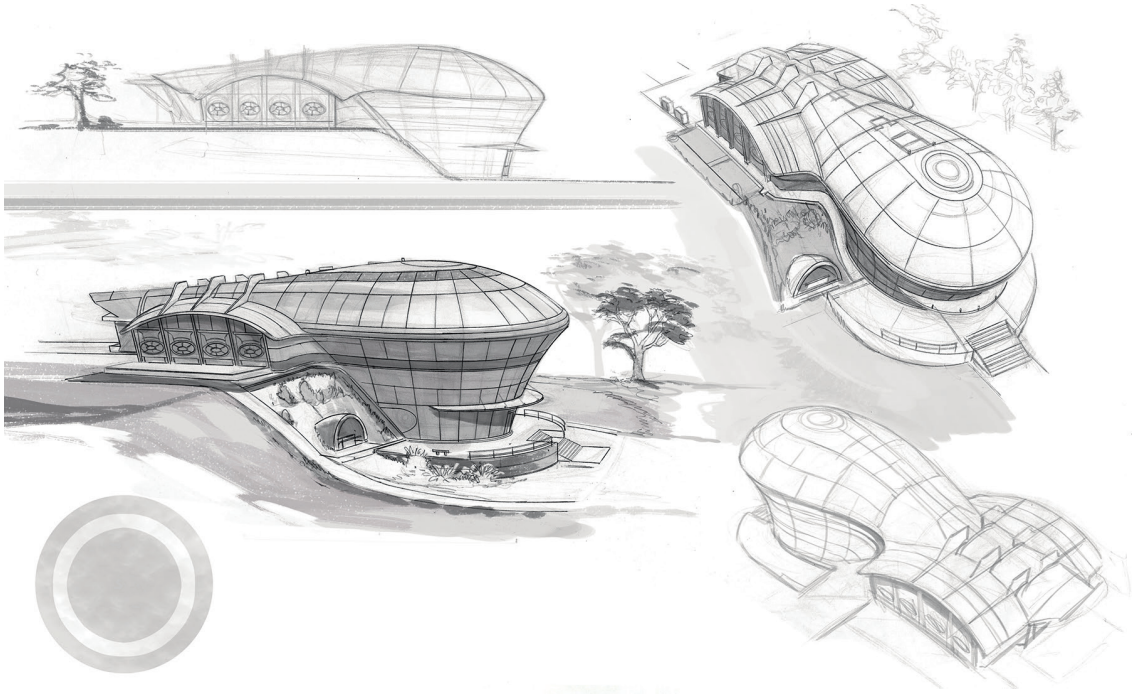
SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

JIM MARTIN / DIGITAL

JIM MARTIN / DIGITAL

THE ROBOTICS LAB NEEDED TO LOOK BOTH INSPIRATIONAL AND AS HIGH-TECH AS THE THINGS BEING DESIGNED INSIDE IT. WE STUDIED ARCHITECTS LIKE SANTIAGO CALATRAVA, RENZO PIANO, AND SHIN TAKAMATSU BECAUSE WE USED A LOT OF GLASS, CONCRETE, STEEL, AND OPEN STRUCTURAL SUPPORTS.

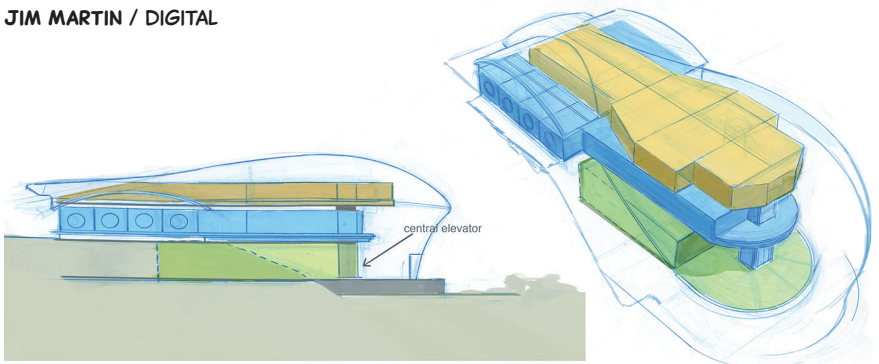
JIM MARTIN,
VISUAL DEVELOPMENT ARTIST

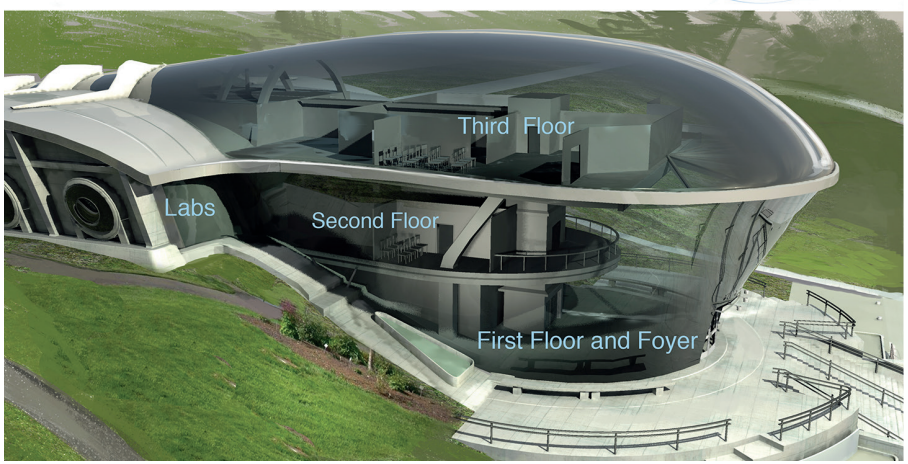


JIM MARTIN / DIGITAL

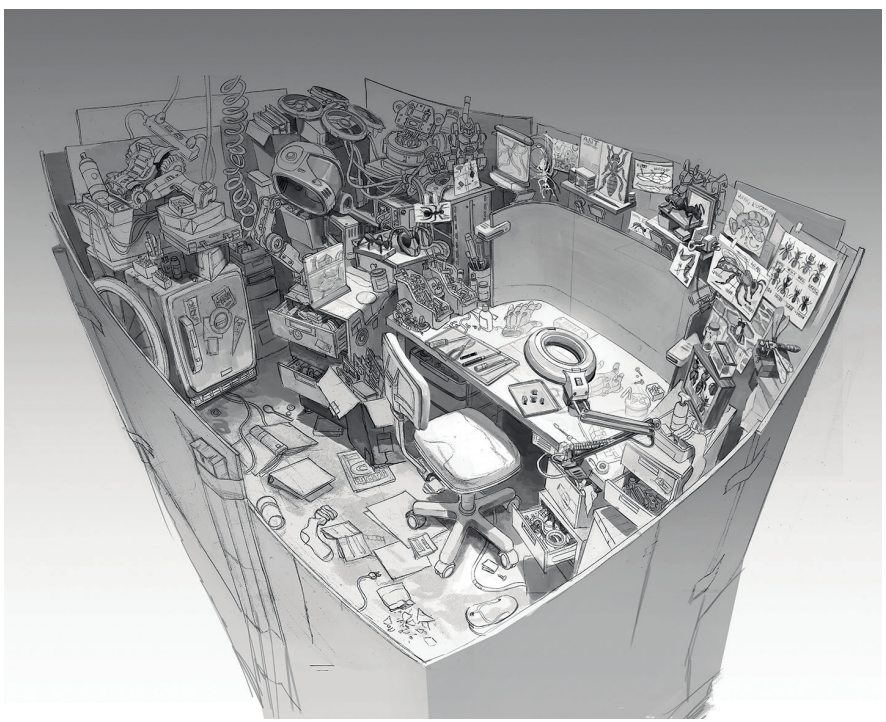
ONCE WE DESIGNED THE EXTERIOR, EVERYTHING STARTED TO FALL INTO PLACE. JIM MARTIN DID A LAYOUT PLAN OF HOW THE WHOLE BUILDING FUNCTIONED BASED ON OTHER ROBOTIC LABS, LIKE MIT, ART CENTER IN PASADENA, CALTECH, AND JPL. REAL PLACES WHERE PEOPLE ASSEMBLE AND BUILD THINGS IN A SCIENTIFIC AND CREATIVE WAY.

MIKE YAMADA,
VISUAL DEVELOPMENT ARTIST

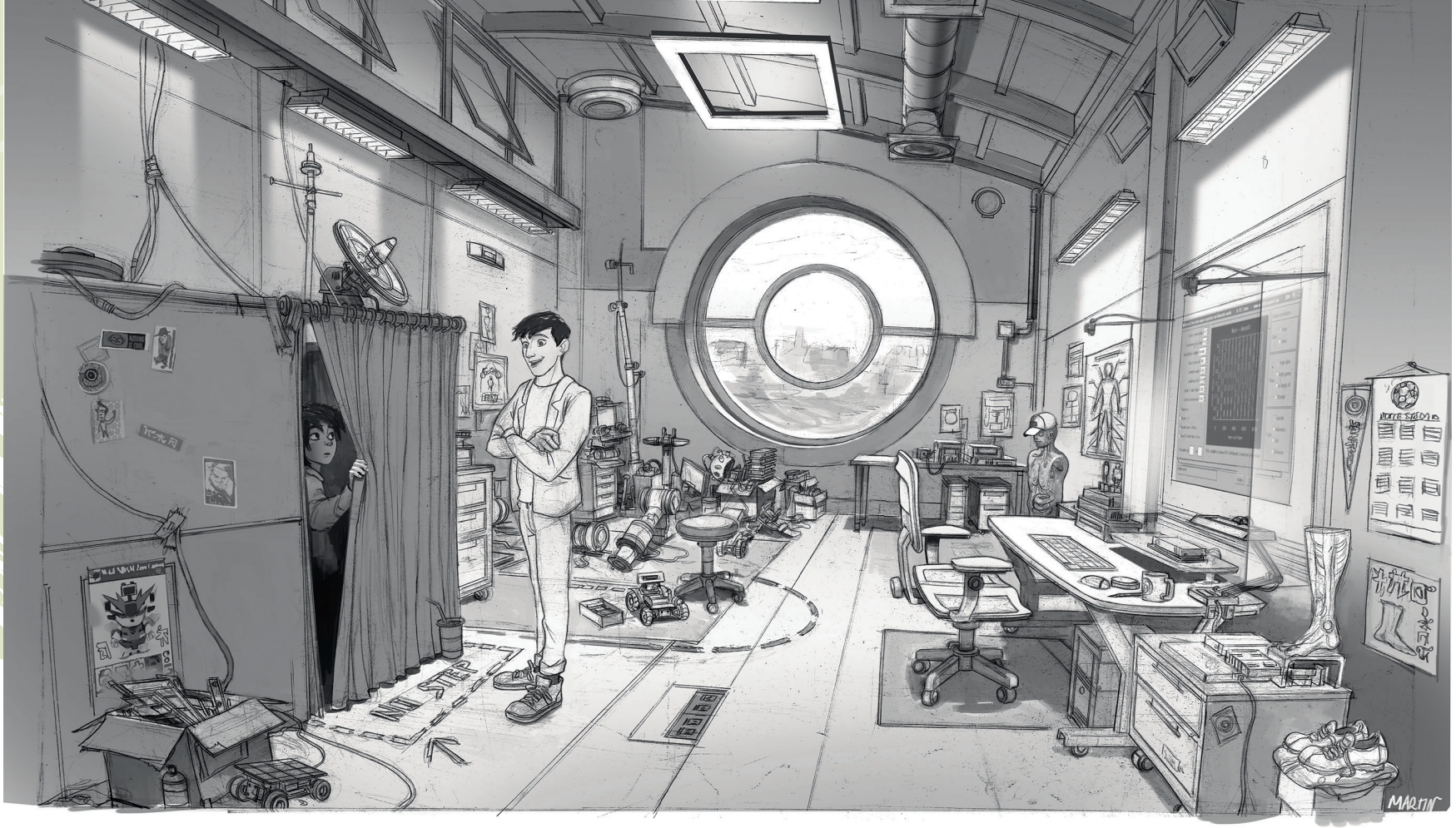




JIM MARTIN / DIGITAL

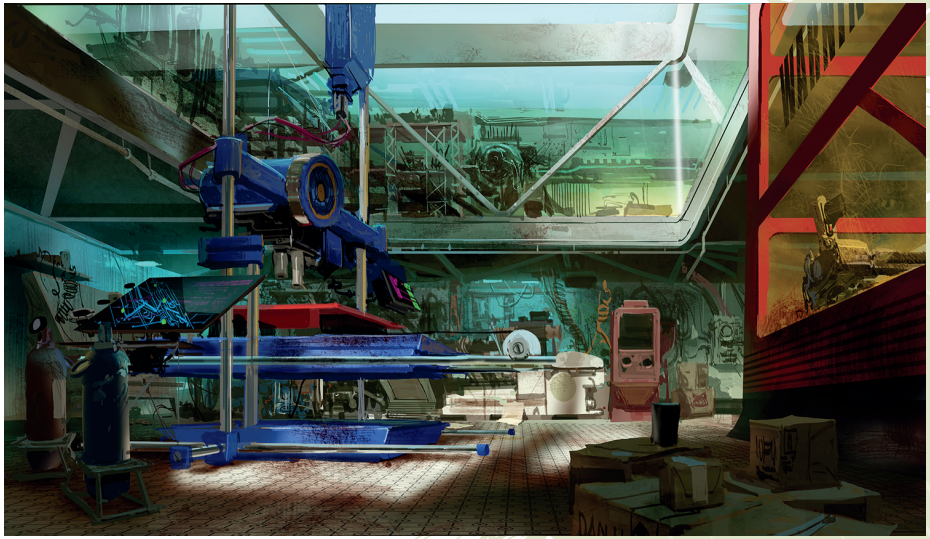


JIM MARTIN / DIGITAL



JIM MARTIN / DIGITAL

PAUL FELIX / DIGITAL

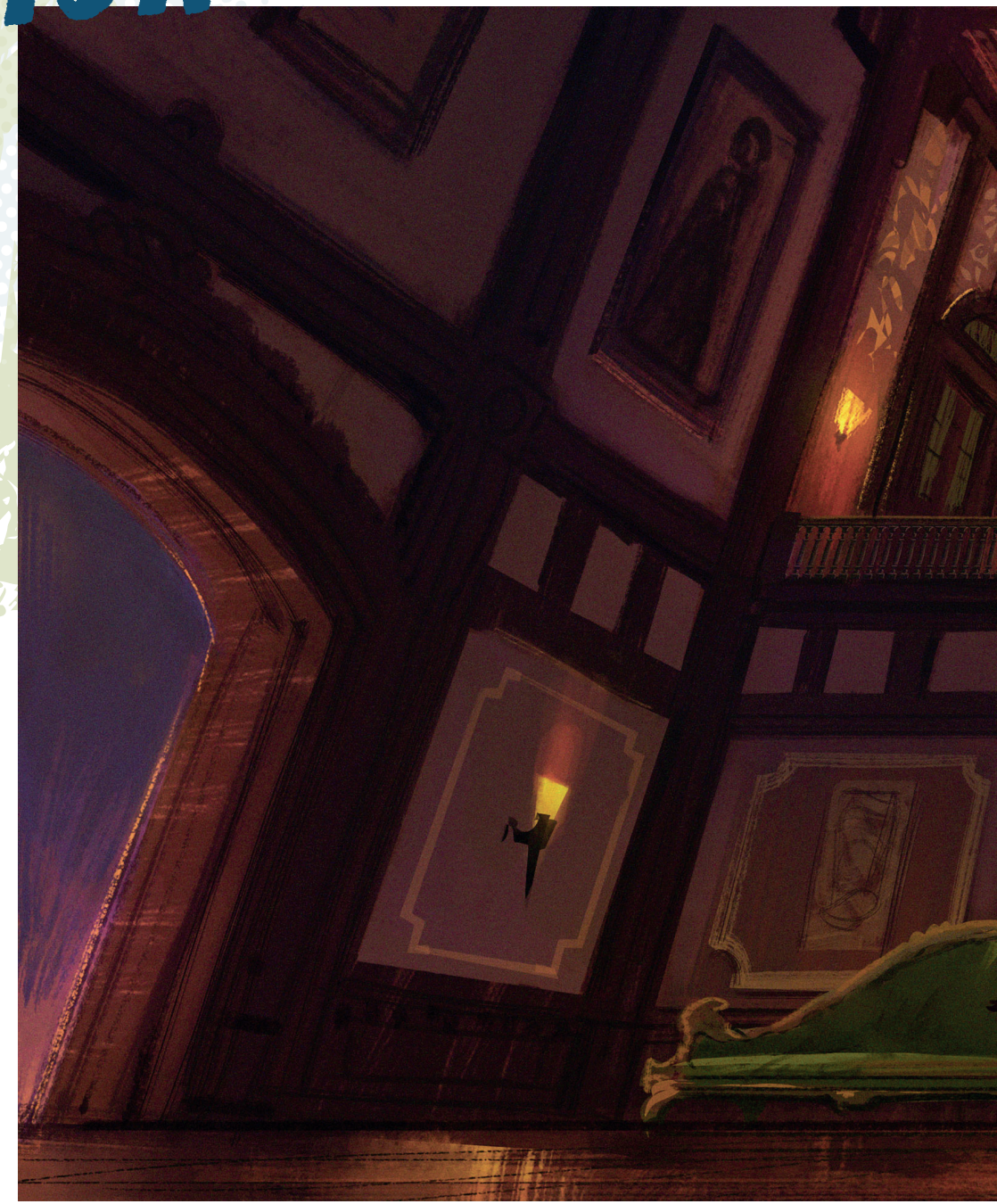


PAUL FELIX / DIGITAL

FRED'S MANSION

After their first encounter with the villain, Yokai, the *Big Hero 6* team needed a refuge where they could transform from ordinary college students into super heroes. Tweaking the comic book cliché of the secret hideout, the filmmakers decided it should be provided by an unlikely source—slacker Fred. "There's an assumption about Fred based on his appearance. It's a surprise to everyone that he comes from a wealthy family and lives in a mansion," says director Chris Williams. Fred's estate becomes the team's headquarters, offering seclusion and a safe place to develop their technologies and practice their skills.

Fred's bedroom cements him as the team's fanboy guru. Production designer Paul Felix conceived of the interior as "Fred's nerd paradise, where he has every comic book ever printed, every kaiju monster suit under glass, movie props, and action figures. It's a shrine to his obsession." Director Don Hall laughs. "We basically took the average cubicle here at Disney and multiplied it by a thousand."



FRED'S MANSION IS MORE PALATIAL THAN YOU TYPICALLY FIND IN SAN FRANCISCO. WE LOOKED AT THE LARGE HOMES IN PACIFIC HEIGHTS BUT THEY DIDN'T HAVE THE GRANDIOSE FEEL WE WANTED.

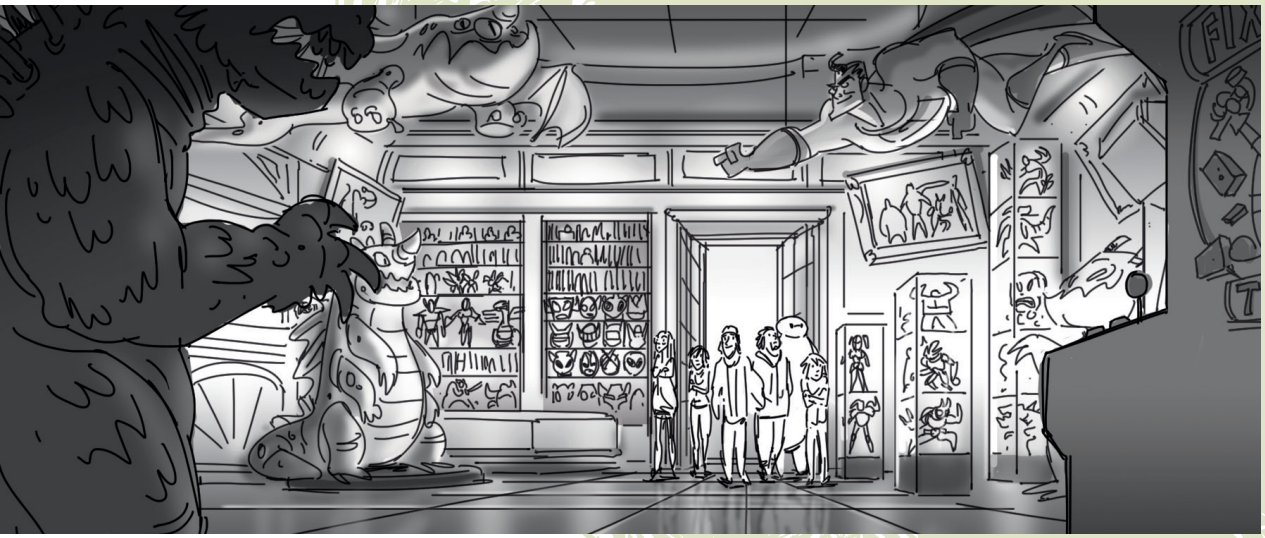
SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

JAMES FINCH / DIGITAL

SCOTT WATANABE / DIGITAL

JAMES FINCH / DIGITAL

ARMAND SERRANO / DIGITAL



LEO MATSUDA / DIGITAL

RYAN LANG / DIGITAL

FRED'S BEDROOM IS A FANBOY'S DREAM COME TRUE. IT'S JUST OVER THE TOP FULL OF FIGURES AND NERD REFERENCES AND IS BY FAR ONE OF THE MOST GRAPHICALLY DENSE SETS IN THE FILM.

CHRIS WILLIAMS, *DIRECTOR*

HELEN CHEN / DIGITAL

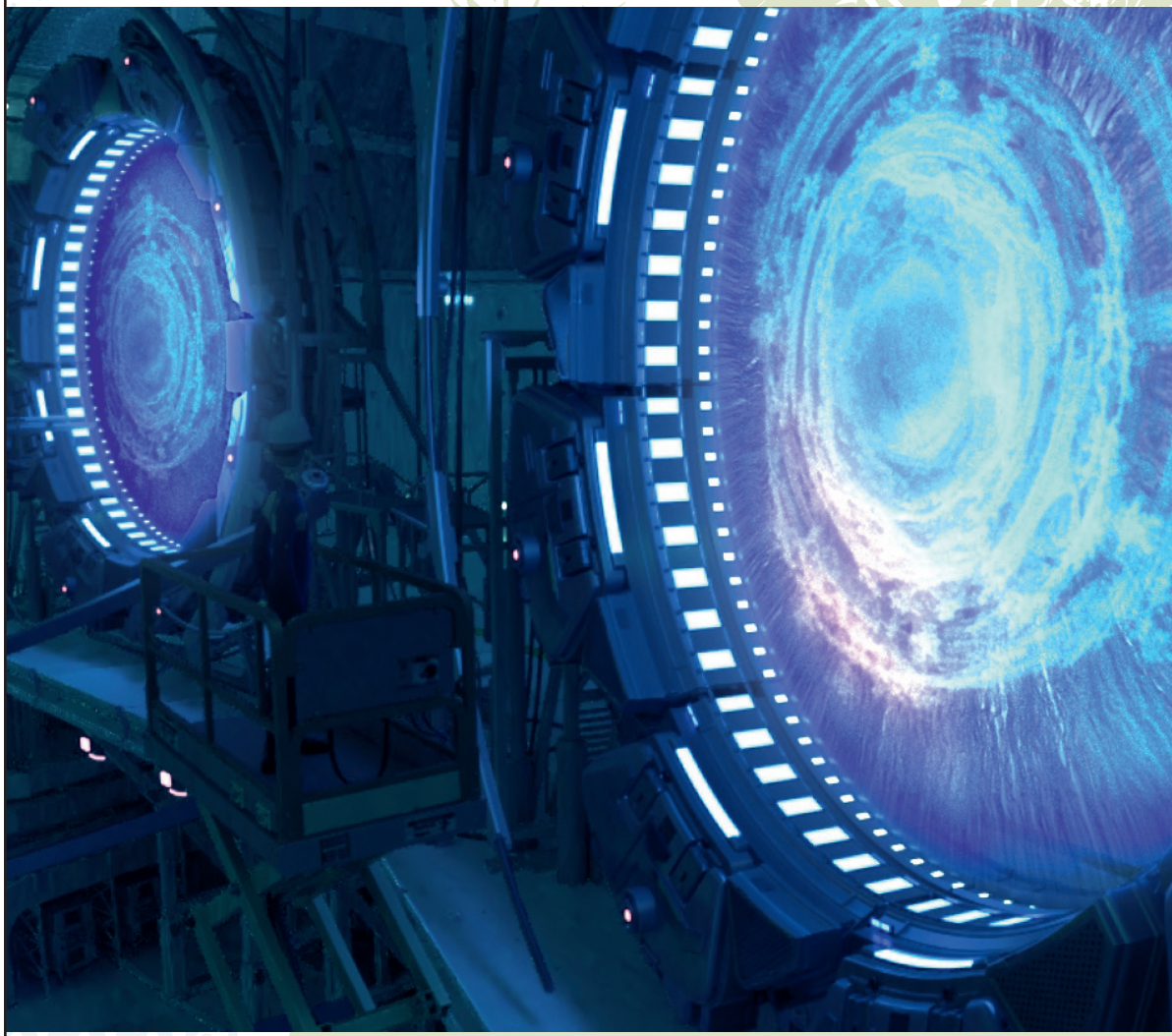
RYAN LANG / DIGITAL

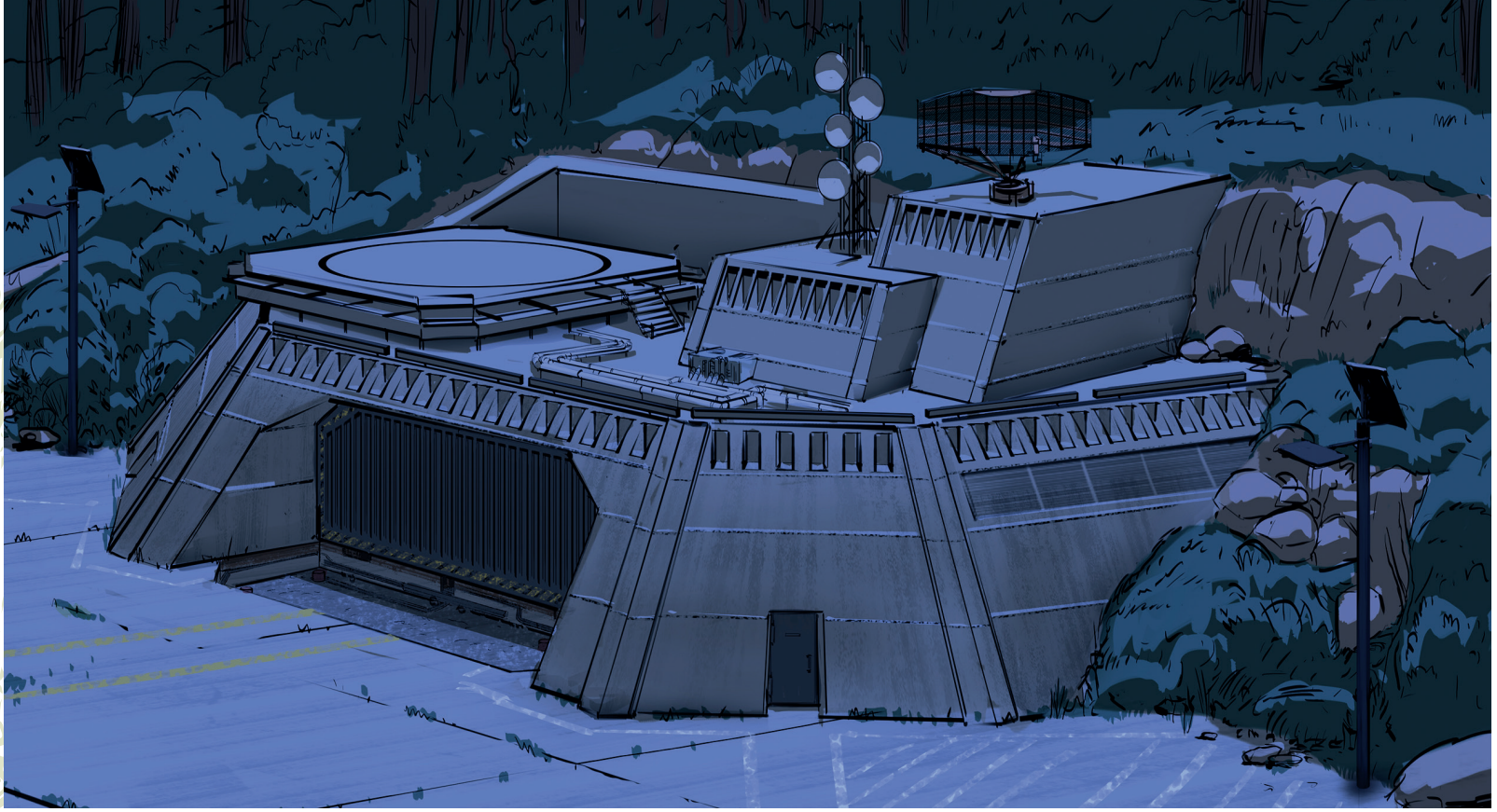
THE PORTAL

In terms of design, the Portal—the teleportation device in which the climactic final showdown takes place—was one of the hardest environments to crack. The filmmakers wanted to create something unlike the usual conception of a portal seen in many science-fiction films. "That's part of the fun," says story artist John Ripa, who boarded the sequence. "Story and visual development work hand in hand. If what I need hasn't been designed yet, I get to invent it in my boards." The team toyed with the Portal's location, at one point setting it deep in the catacombs beneath Alcatraz, before finally devising a San Fransokyo version of Angel Island, which they dubbed Akuma Island. "It means 'demon' or 'devil' in Japanese," says director Don Hall.

The Portal was particularly challenging because "it went through so many changes in location and conception," says production designer Paul Felix. "It was originally an abandoned military base, and Yokai was going to steal a nuclear submarine to power it. At one point, a monster called the Entity was going to emerge from it and lay waste to the city. Eventually, it changed to being used for teleportation."

With its purpose established, the team faced another quandary—what would a teleportation portal actually look like? Tech supervisor Hank Driskill explains, "We consulted with Dr. Sean Carroll, a theoretical physicist from Caltech, to get ideas and ground it in physicality. We talked about what a wormhole would look like. People have an idea from movies and television of tunnels and swirly stuff, but that is not what theoretical physicists think it is at all." And then there was the question of how each side of the Portal would connect to the other. "Would they connect through another dimension? Through the intervening space? Would they connect in some random way, or would there be a straight line between two spaces? Could you end up in the middle of outer space somewhere, or would your scale change as you pass through the hole? That was fun to think about."





RYAN LANG / DIGITAL

JIM MARTIN / DIGITAL

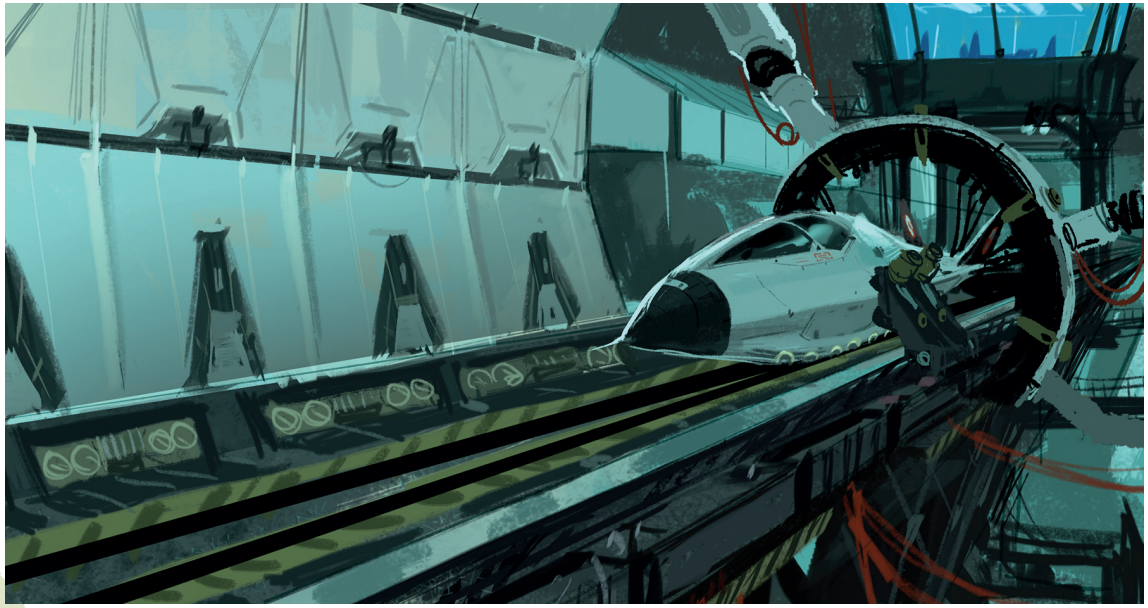
JIM MARTIN / DIGITAL

MIKE YAMADA / DIGITAL

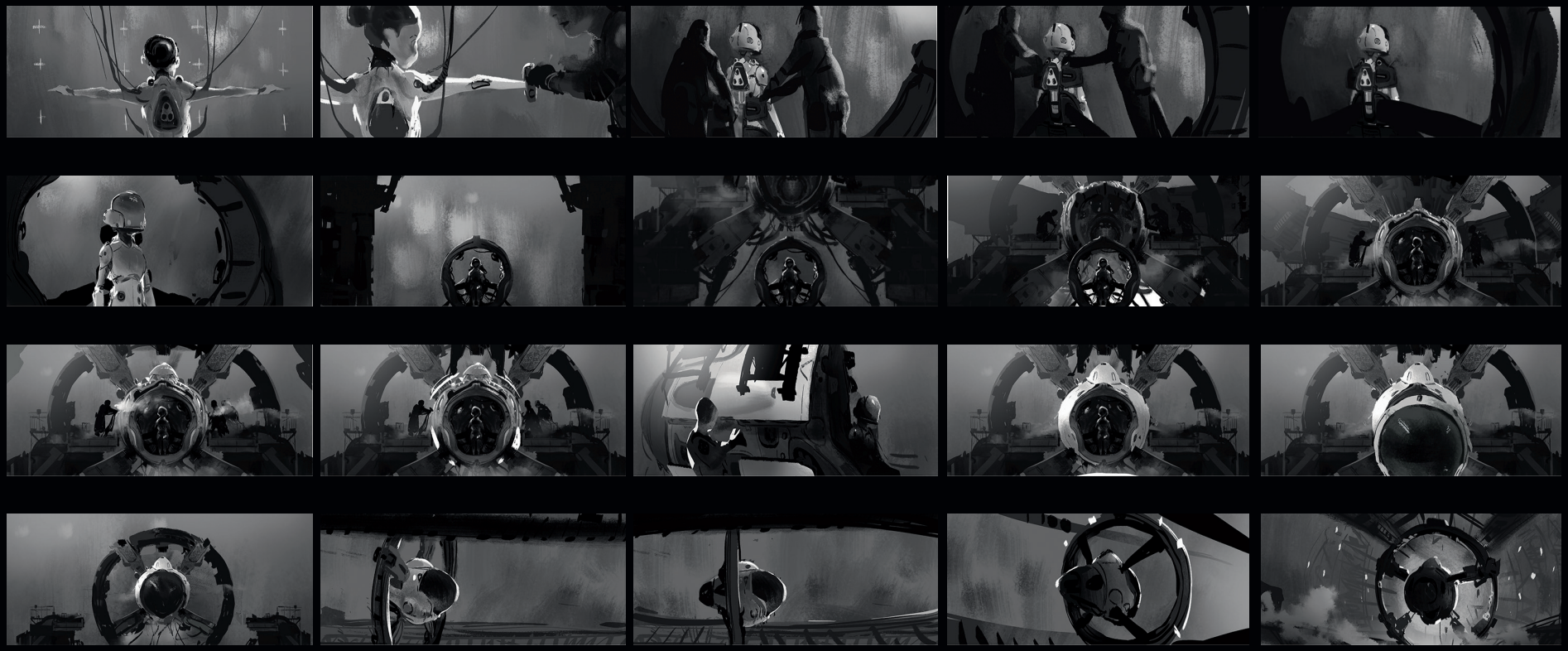
JIM MARTIN / DIGITAL

WE USED BIG, SIMPLE SHAPES WITH INTENSE CONCENTRATIONS OF DETAILS. THE HADRON COLLIDER WAS AN INSPIRATION; THERE'S SO MUCH MACHINERY PACKED INTO ONE RING.

PAUL FELIX, *PRODUCTION DESIGNER*



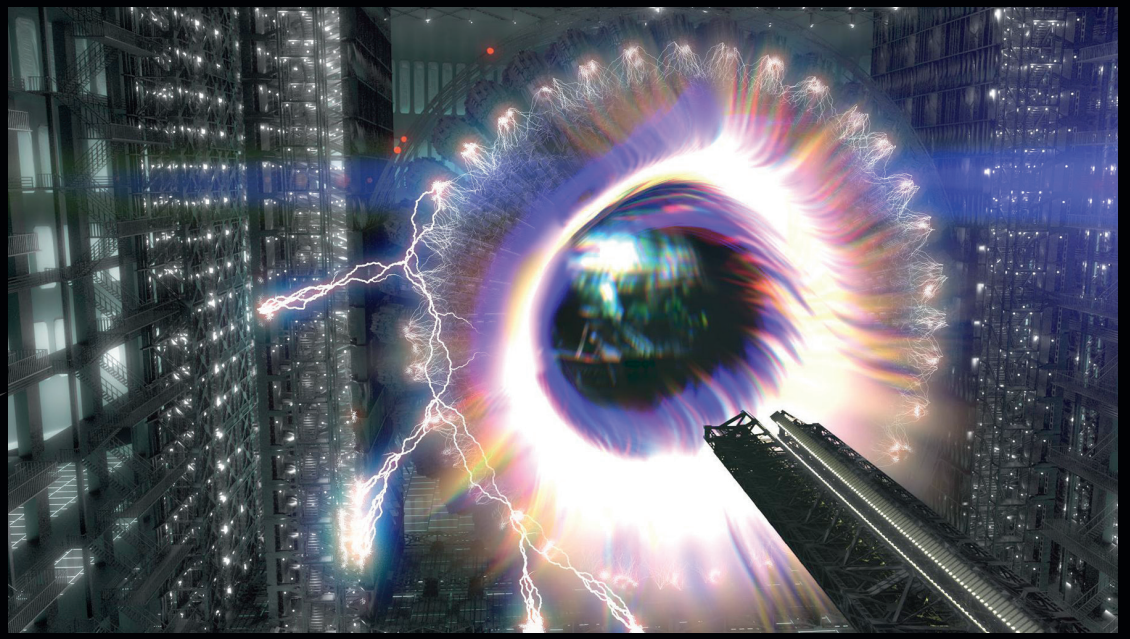
MIKE YAMADA / DIGITAL



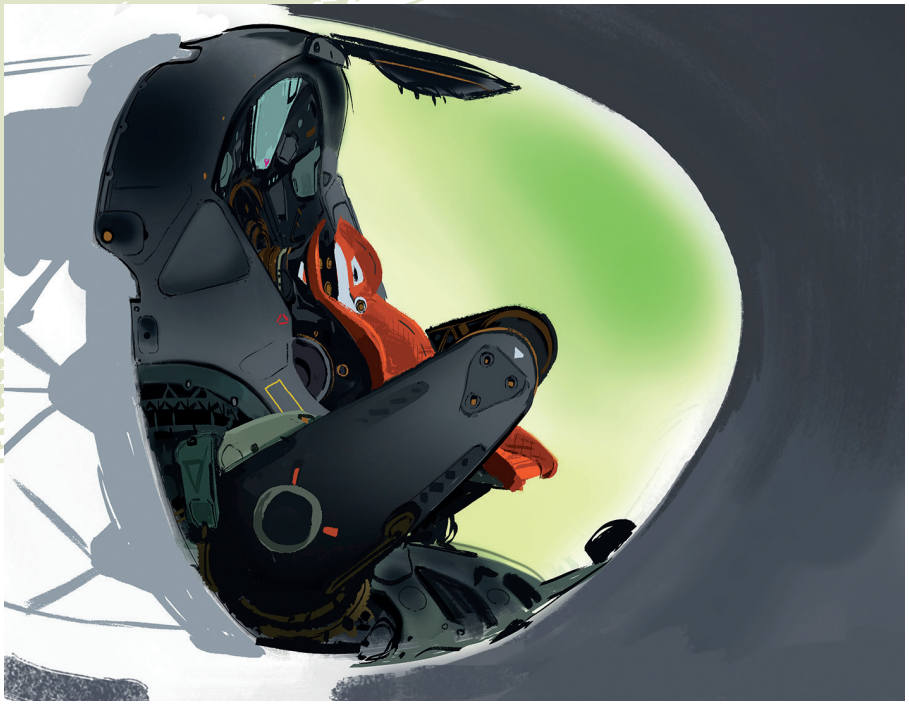
MIKE YAMADA / DIGITAL

WHAT WOULD BE REQUIRED, ENGINEERING-WISE, TO MAKE THE PORTAL WORK? HOW MUCH POWER WOULD IT GENERATE? AND HOW DO YOU MAKE IT LOOK VISUALLY DYNAMIC AND UNIQUE? WHAT IF IT'S NOT A PLANE BUT A SPHERE? WHAT IF IT WERE MADE OF GLASS? WHAT WOULD THE PORTAL BE LIKE INSIDE?

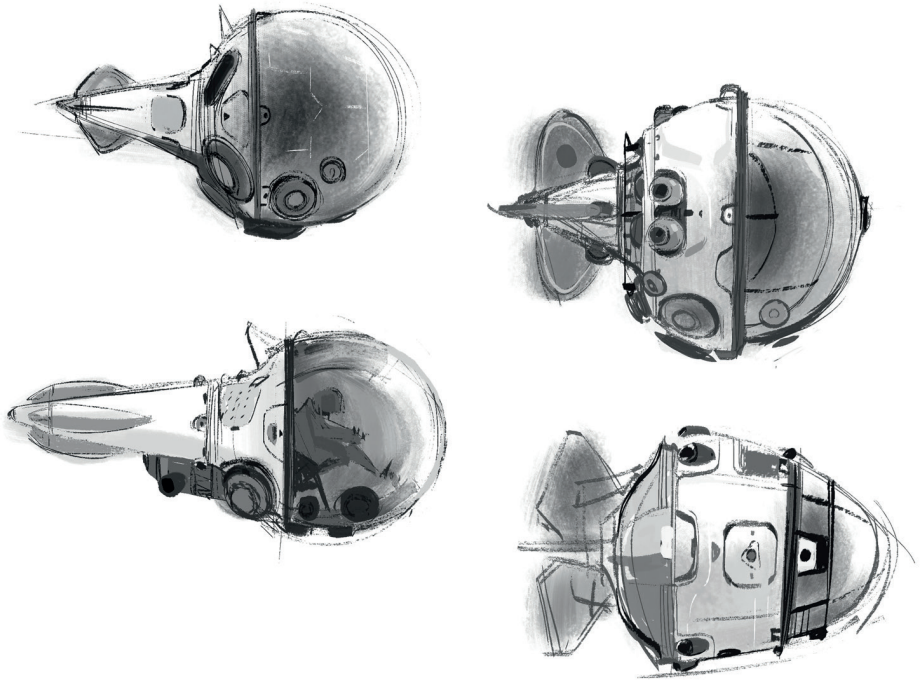
PETER DE MUND, *FX DESIGNER*



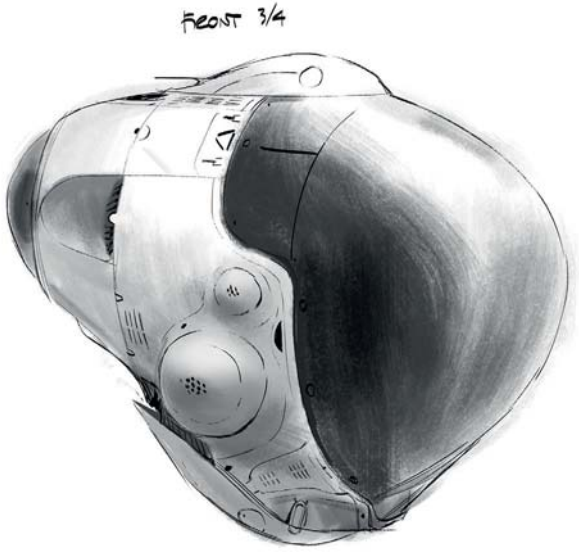
PETER DE MUND / DIGITAL



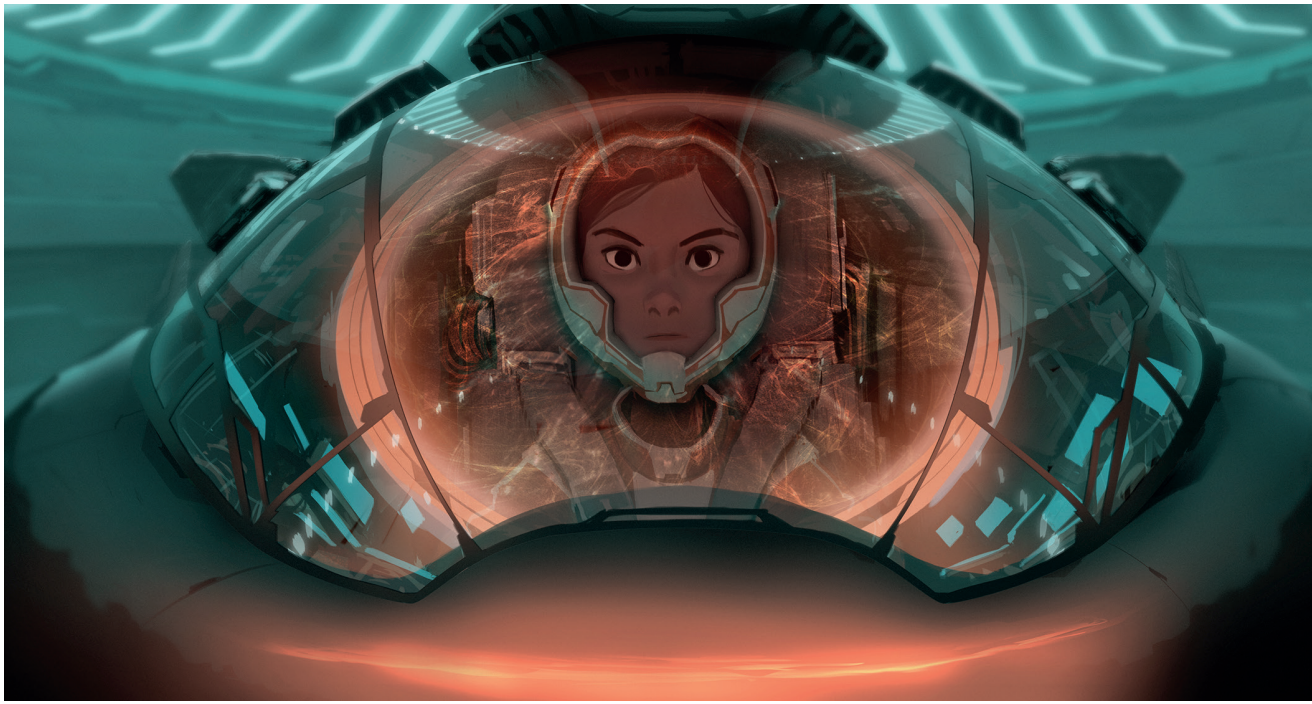
MIKE YAMADA / DIGITAL



MIKE YAMADA / DIGITAL



MIKE YAMADA / DIGITAL



RYAN LANG / DIGITAL

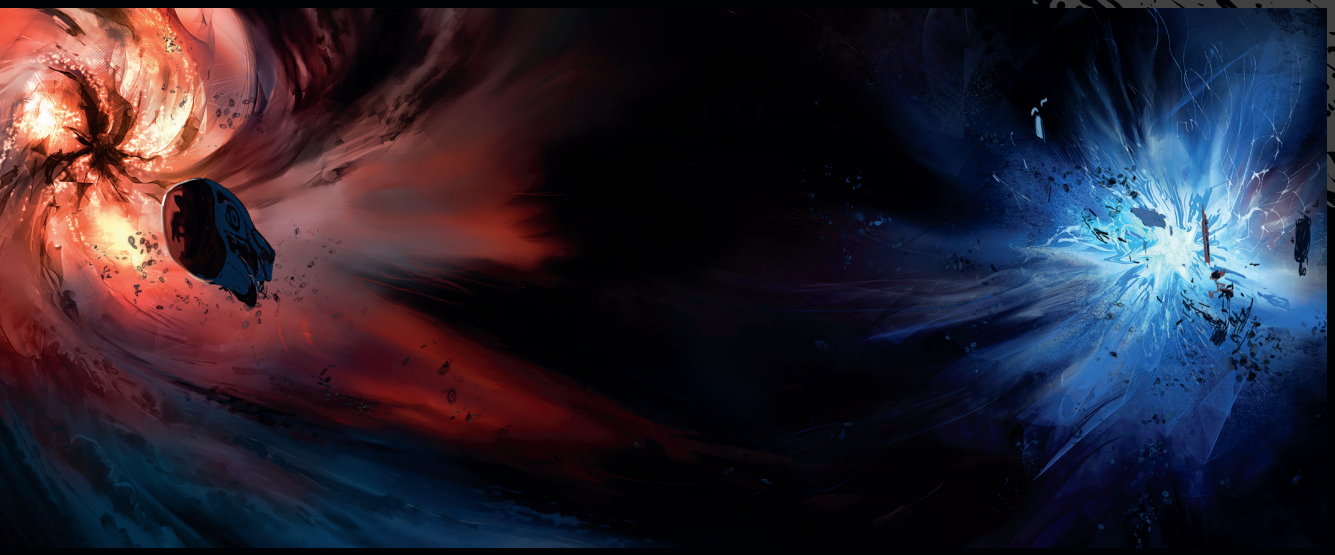
RYAN LANG / DIGITAL

PAUL FELIX / DIGITAL

LARRY WU / DIGITAL

JAMES FINCH / DIGITAL

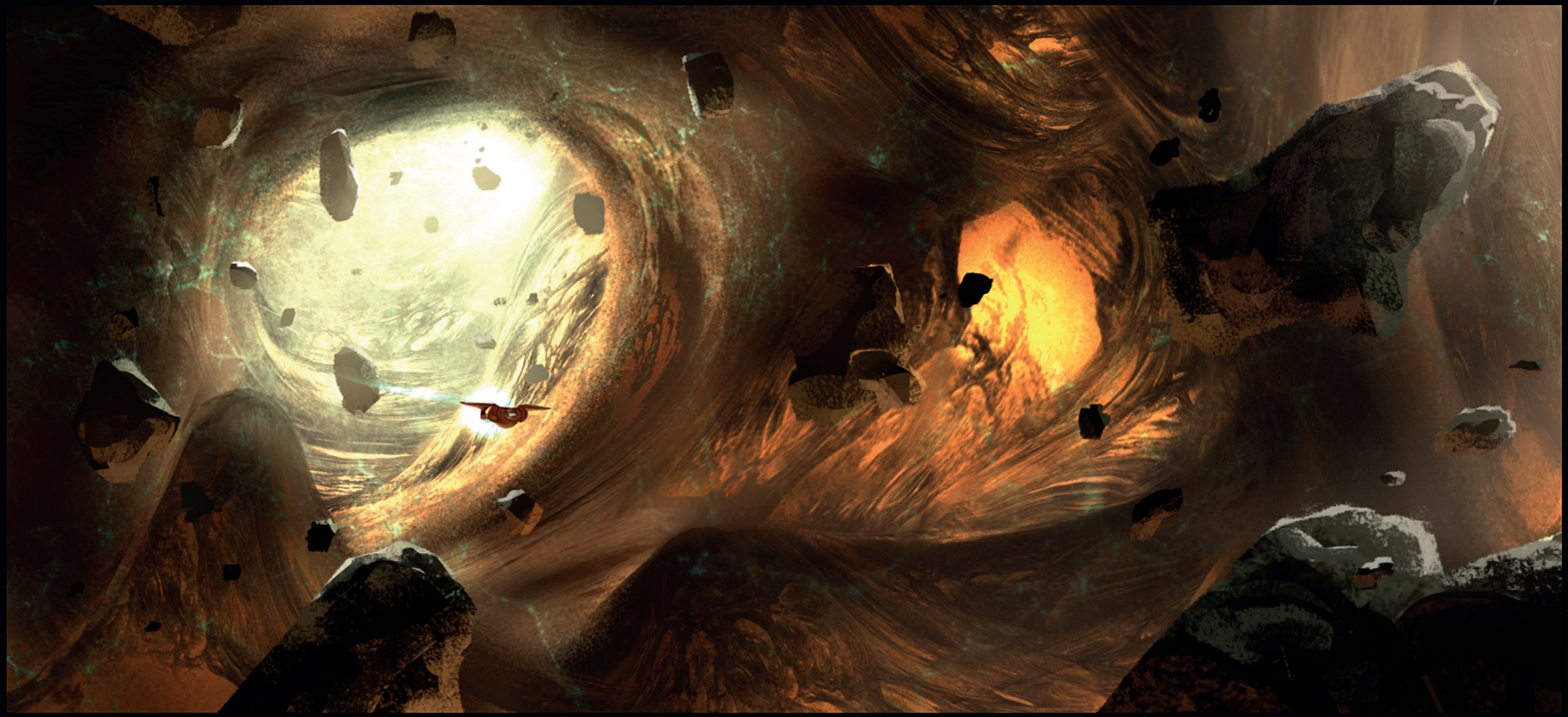
RYAN LANG / DIGITAL



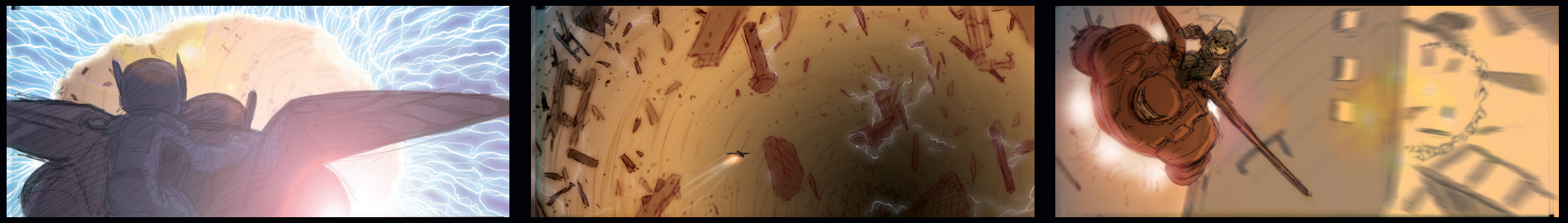
PAUL FELIX / DIGITAL

SEAN CARROLL FROM CALTECH HAD IDEAS ABOUT WHAT BEING IN A PORTAL WOULD FEEL LIKE. BUT HE ALWAYS ENDED BY SAYING, "AND THEN YOU PROBABLY DIE."

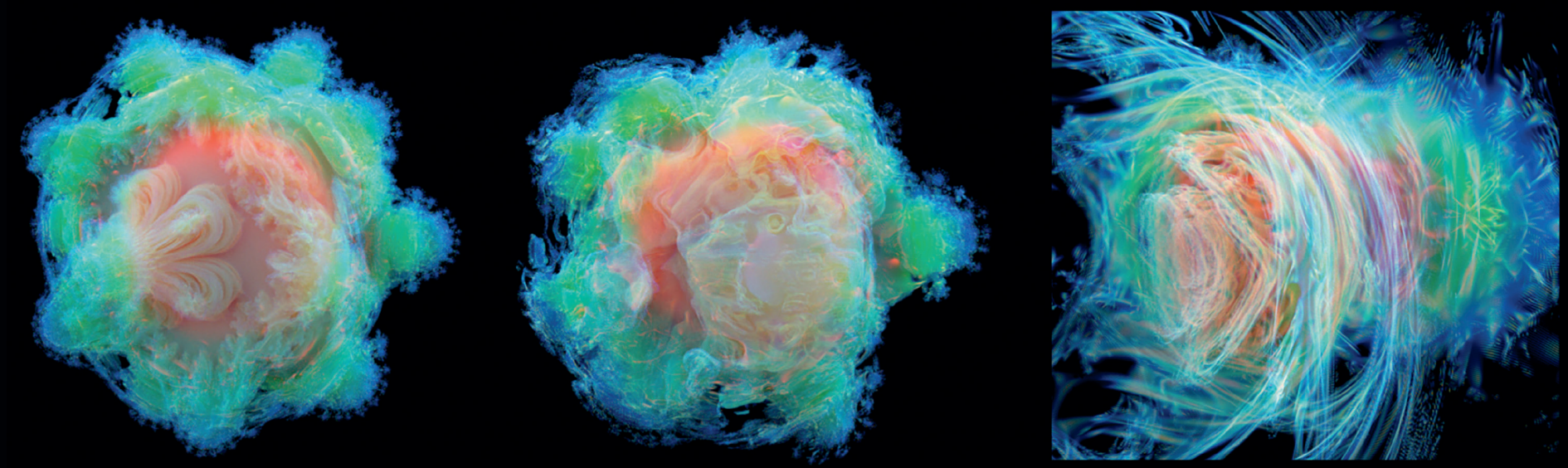
PETER DE MUND, *FX DESIGNER*



RYAN LANG / DIGITAL



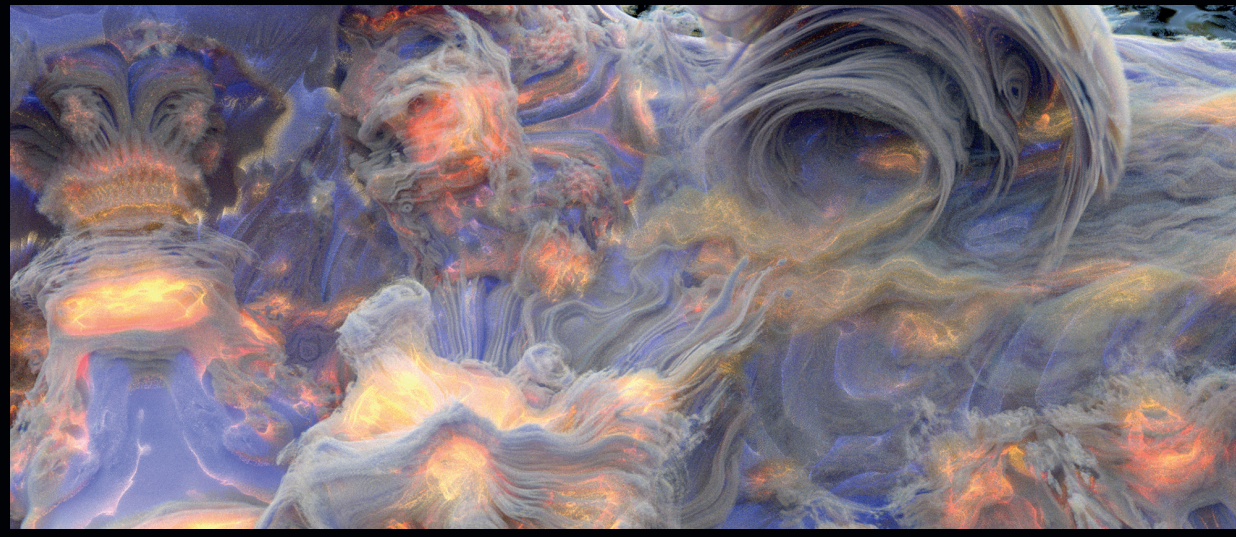
JOHN RIPA / DIGITAL



DAVID HUTCHINS / DIGITAL

I WANTED TO USE FRACTALS AS AN ART FORM THAT WENT BEYOND COOL MATHEMATICAL IMAGERY. FRACTALS ARE INFINITELY RECURRENT, WHICH MEANS THE PATTERN REPEATS ITSELF OVER AND OVER, SO IT'S HARD TO PERCEIVE SCALE. FRACTAL PATTERNS SHOW UP ALL OVER THE PLACE IN NATURE—IN SUNFLOWERS, IN BROCCOLI, AND SNAILS, AND GALAXIES.

MICHAEL KASCHALK,
HEAD OF FX ANIMATION

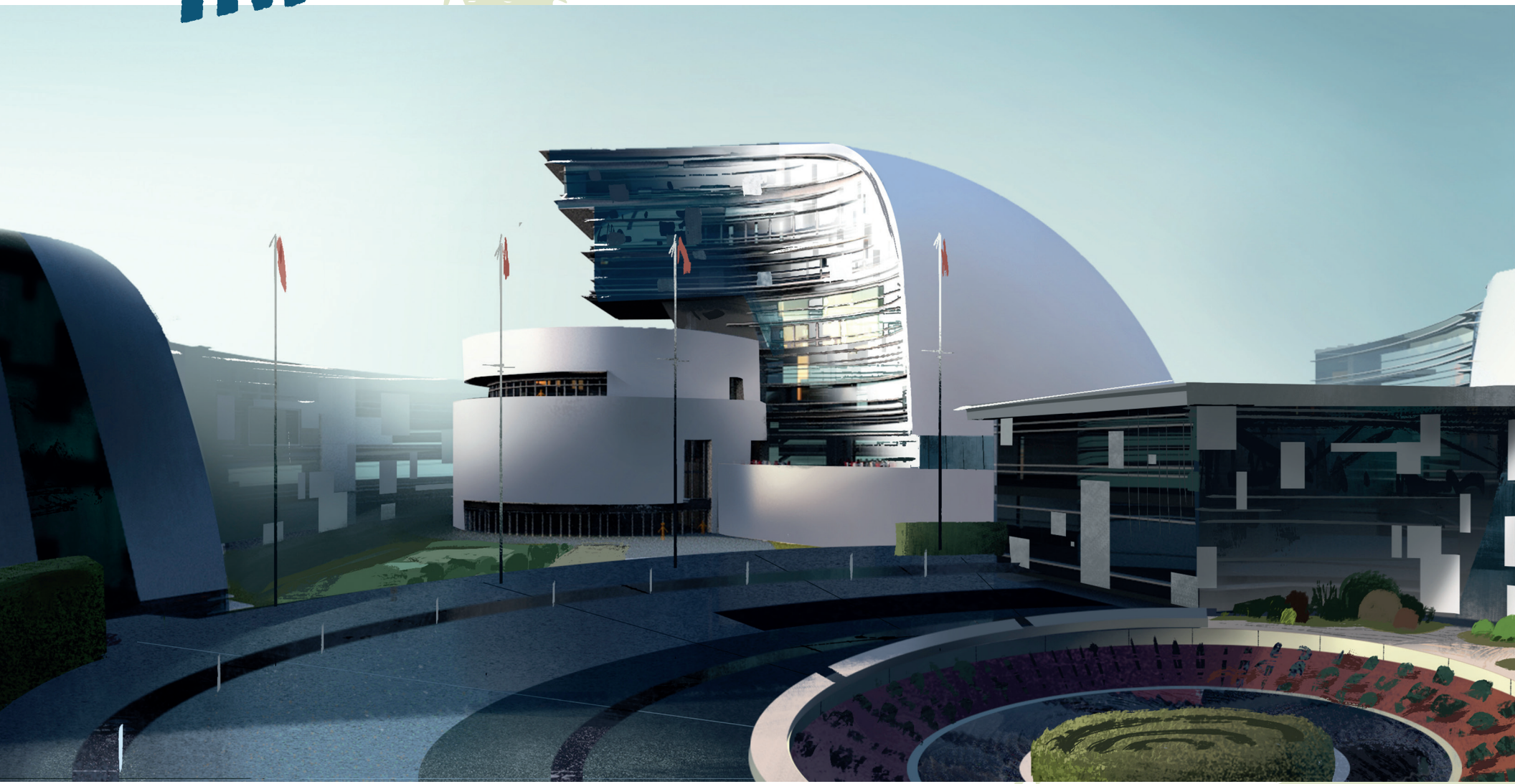


DAVID HUTCHINS / DIGITAL

KREI TECH INDUSTRIES

KREI TECH HAS A BRIGHT, CIRCULAR, VORTEX-LIKE DESIGN. THE PORTAL IS A BIG, DARK SHAPE ABOVE IT. THEY MIRROR EACH OTHER, SO THERE'S A VERY GRAPHIC DIFFERENCE BETWEEN THE NEGATIVE SPACE OF THE PORTAL AND THE POSITIVE SPACE OF THE BUILDING.

MIKE YAMADA, *VISUAL DEVELOPMENT ARTIST*



MIKE YAMADA / DIGITAL

HELEN CHEN / DIGITAL

KREI TECH INDUSTRIES IS A STATE-OF-THE-ART FACILITY, WITH A VERY SLEEK, SEXY, FUTURISTIC FEEL. RATHER THAN A TYPICAL SKYSCRAPER WITH A LOGO ON TOP, THE BUILDINGS ARE LOOPS ARRANGED IN CONCENTRIC CIRCLES.

SCOTT WATANABE,
ART DIRECTOR, ENVIRONMENTS

MIKE YAMADA / DIGITAL

THE CHARACTERS OF *BIG HERO 6*

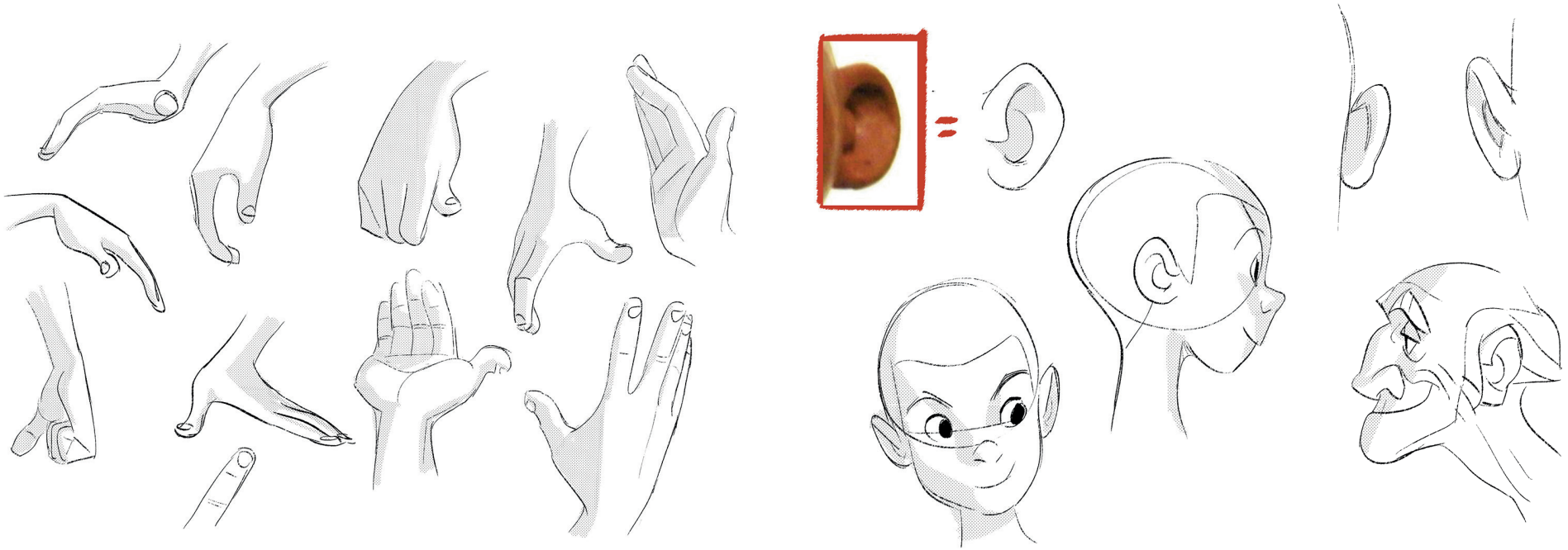
When it came time to conceive the characters for *Big Hero 6*, production designer Paul Felix and character designer Shiyoon Kim wanted to keep things simple. "With rich, detailed environments, you need the characters to be streamlined to the bare essentials," says Felix. "A complex visual background combined with uncomplicated visual textures for the characters really appealed to everyone and dictated our approach to their designs."

Kim cites legendary Disney animators Milt Kahl and Glen Keane as particular influences. "Milt simplified his poses to make the cleanest, clearest statement and took out anything superfluous," says Kim. "And Glen would always tell us, as trainees, to put something personal in our work. A drawing is the beginning of a character that will be modeled and rigged and animated by a team of people. If you talk about your personal experiences and feelings behind the drawings, then that team understands the design better, which impacts their decisions on small things, like how sharp a chin will be."

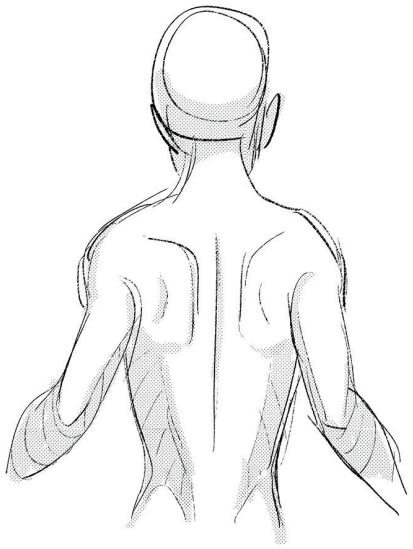
At the same time, says Kim, "I wanted the unifying element of *Big Hero 6* to be a natural feel, to not lose the speed and line quality of hand-drawing once it was translated into the CG models." Therefore, it was important that each character's design be driven by the story. "We'd ask, what kind of character is he? Where is she coming from? What's this person's backstory?"

On the other hand, Felix adds, "We're not making a live-action film. And what animation is good at is caricature." A lot of thought went into determining how much to stylize each character, particularly when to go for a more caricatured look versus when to take a more realistic approach. "Often the same character will have elements of both. It's whatever feels better, and it's a mix you don't know you've gotten right until you feel it. It's never an easy balance."

One key to cracking the overall look of the *Big Hero 6* team was remembering that, in the words of director Don Hall, "these are normal, college-age kids who are made superpowered by a fourteen-year-old's genius—normal people enhanced by technology." They also had to feel like individuals, while still forming a unified appearance once they donned their supersuits. Hall admits, "My first instinct was to go for something a little grungier, rather than a cohesive look. But it didn't have the fun." Kim credits visual development artist Lorelay Bove with finding the team's unique color palette. "She tried color combinations you would not normally see. And it worked!"



SHIYOON KIM / DIGITAL
PAGES 74–75: **SHIYOON KIM** / DIGITAL



Back Stylization

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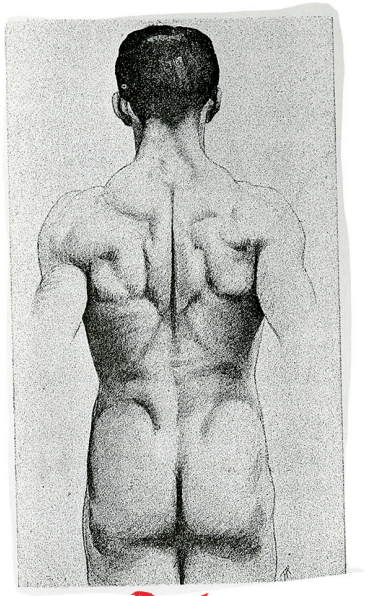
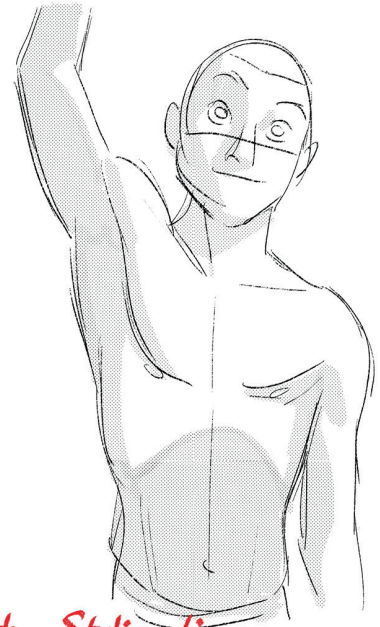


Realism



Torso Stylization

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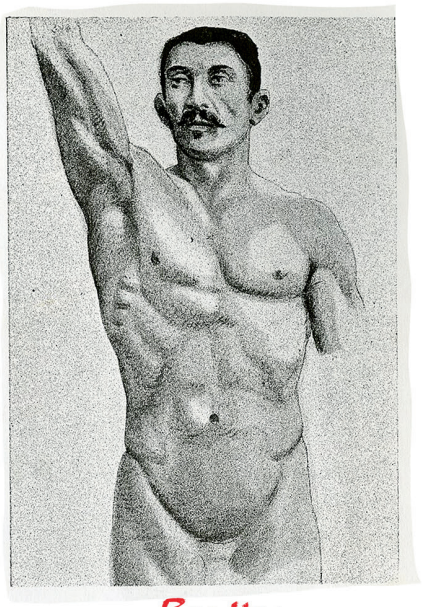
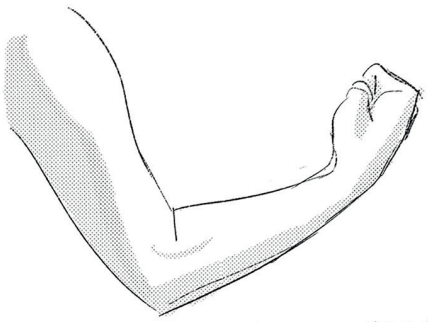


Realism



Arm Stylization BH6

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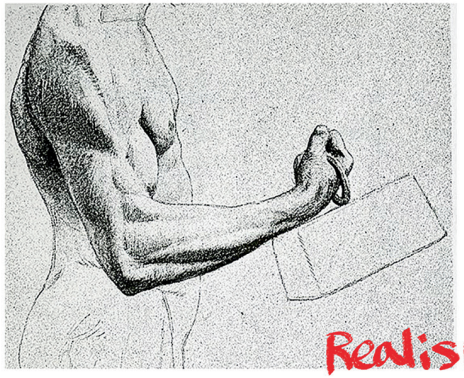
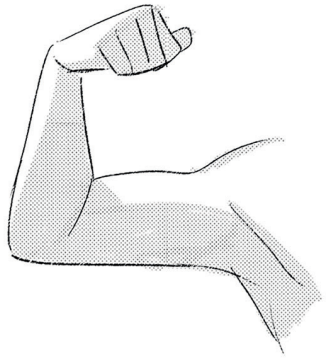


Realism



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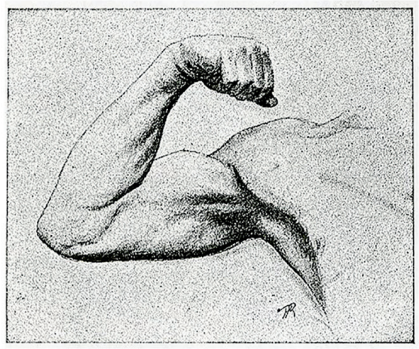


THIS IS A SUPER HERO MOVIE, SO THE ACTION SEQUENCES ARE ON A MUCH GRANDER SCALE THAN WE'VE DONE BEFORE. TO PUT THE DISNEY SPIN ON IT, WE EXAGGERATED THE STYLE OF ANIMATION, THE POSING, TIMING, AND SPACING, WHILE MAKING EACH CHARACTER SPECIFIC BY LETTING THEIR DESIGN, BACKSTORY, AND PERSONALITY DICTATE THEIR MOVEMENT.

ZACH PARRISH, *HEAD OF ANIMATION*

SHIYOON KIM / DIGITAL

JIN KIM / DIGITAL

EACH CHARACTER HAS A DIFFERENT SHAPE LANGUAGE THAT MATCHES HIS OR HER PERSONALITY. WASABI IS A RECTANGLE, HONEY LEMON IS A TALL STRAIGHT LINE, AND FRED IS AN UPSIDE DOWN TRIANGLE.

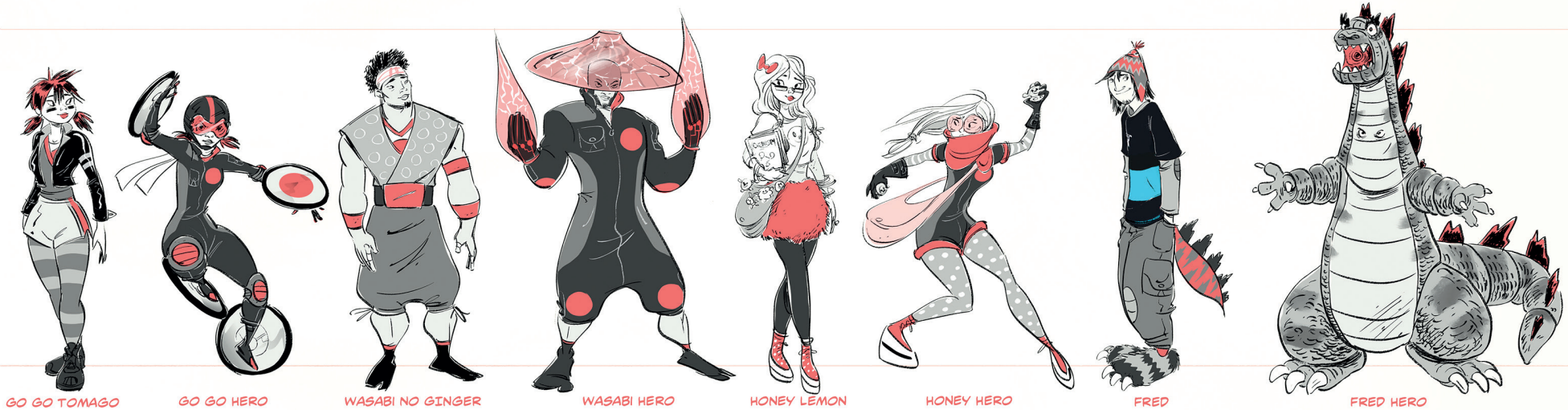
ZACH PARRISH, *HEAD OF ANIMATION*

YOKAI | YOKAI COAT | CASS | TADASHI | HIRO | HIRO HERO 2 | BAYMAX (NURSE) | BAYMAX (ARMOR)

LORELAY BOVE / DIGITAL

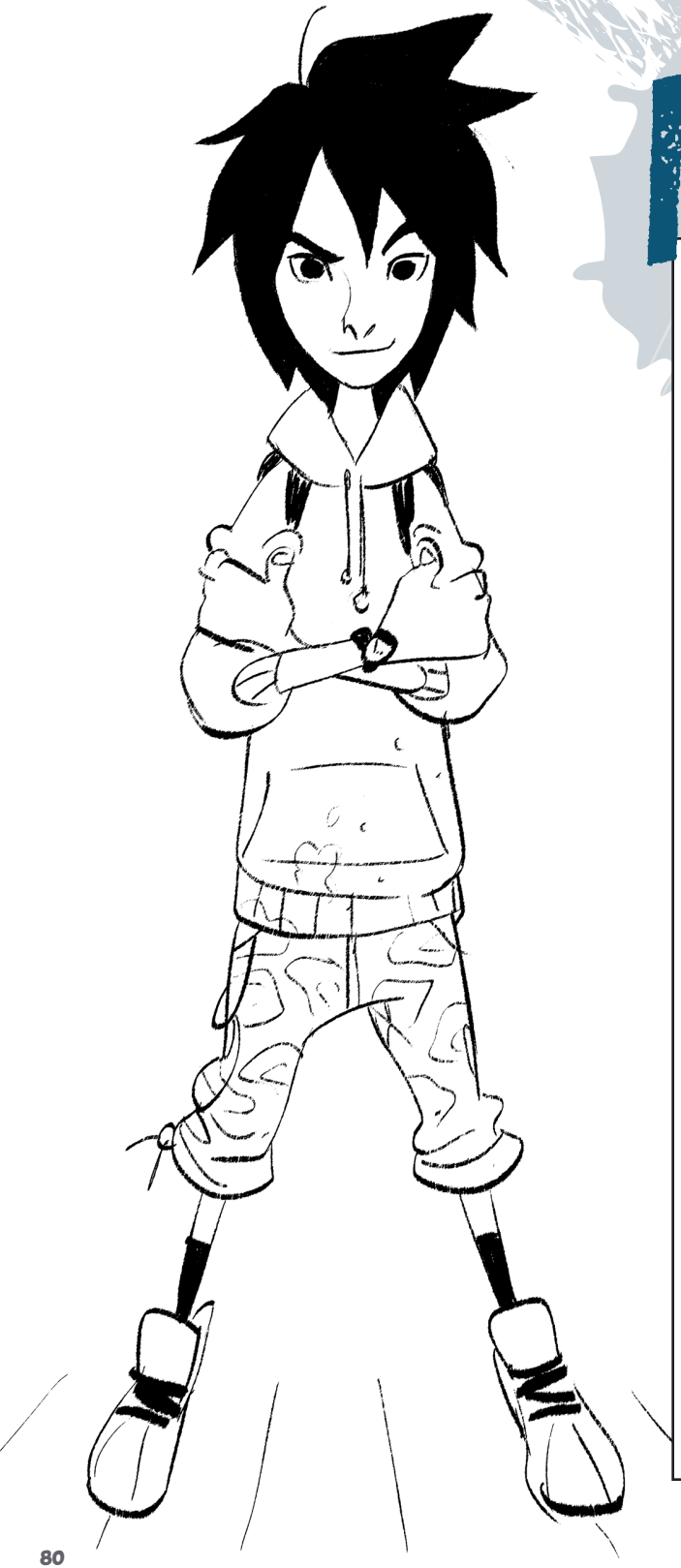
SO MUCH OF FINDING THE CHARACTERS WAS GETTING PAST THEIR SPECIFIC JOBS TO WHAT ARE THEIR PERSONALITIES. HOW DO THEY RELATE TO EACH OTHER? YOU HAVE TO GO DEEPER TO FIND THEM.

CHRIS WILLIAMS, *DIRECTOR*



DON HALL / DIGITAL

HIRO



SHIYOON KIM / DIGITAL

As the protagonist, Hiro Hamada embodies the blended aesthetic of the world he lives in. As Hall observed, "I wanted the characters to be multicultural. Every big city around the world I've traveled to is a melting pot. And our audience is multicultural." So, like San Fransokyo, which is a mix of two distinct cities, Hiro is a mix of cultures.

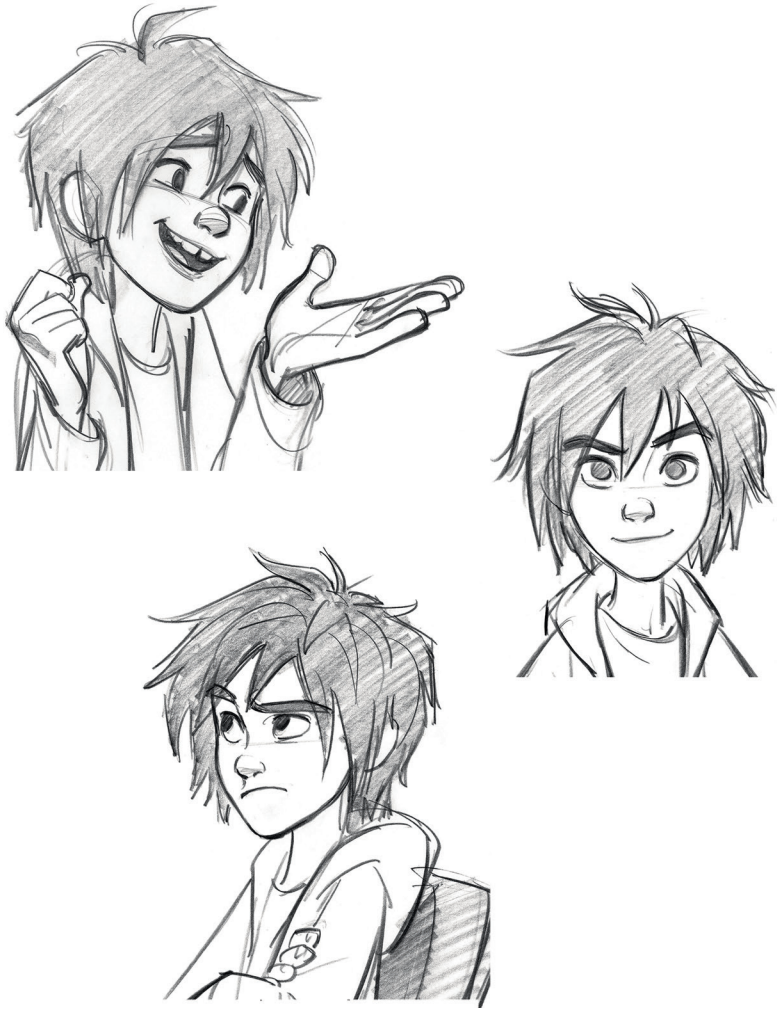
Character designer Shiyoon Kim says, "Hiro started with my own experience as a half-Japanese American kid. I thought about what that fourteen-year-old would wear, what he'd think is cool. A genius kid like Hiro would be eating cup-o-noodles and playing a videogame while also doing his homework. He'd be wearing basketball shorts and have really messy hair. And I wanted his teeth to be kind of crooked, like they're still half-formed."

Character design supervisor Jin Kim, who oversaw the translation of Kim's drawings from paper to CG, says, "Hiro's model is not that far from Shiyoon's original designs. It was all there. I tried to keep the essence of them as much as possible." But Hiro's hair proved to be a particular technical challenge. Kyle Odermatt, VFX supervisor, explains, "Styled hair is easier, because it's sculpted. Mussed-up hair is harder because there's a randomness to it. Bed head is a whole series of pieces moving randomly in a loosely related way."

Hiro's connection with his older brother, Tadashi, is a key element of the story, and defines his character. Says Hall, "Hiro is inspired by Tadashi. He is into robots because Tadashi is." To help the audience invest in their relationship, director Chris Williams hoped to capture "the mischievous things brothers do. I grew up with a brother, and we would do things like build a fort out of a pile of pillows. But Hiro and Tadashi are two super-geniuses, and can build things a normal kid can't, so it's a whole new level of fun."

DON HALL / DIGITAL

SHIYOON KIM / DIGITAL



JIN KIM / GRAPHITE

LORELAY BOVE / DIGITAL

HIRO WAS A CHALLENGE, BECAUSE HE'S A GANGLY, FOURTEEN-YEAR-OLD BOY GENIUS. HE NEEDS TO BE APPEALING BUT NOT A CUTESY KID. WE FOUND HIS DESIGN BY STUDYING YOUNG TEENAGERS WHO ARE REALLY BRILLIANT IN SCIENCE OR THE ARTS, WHO ARE SO UTTERLY FOCUSED ON THEIR PARTICULAR INTEREST THAT DRESSING AND COMBING THEIR HAIR IS AN AFTERTHOUGHT.

JOHN LASSETER, *EXECUTIVE PRODUCER*

SARA AIRRIESS / GRAPHITE

JIN KIM / DIGITAL

HIRO IS FOURTEEN, WHICH IS AN AWKWARD AGE NO MATTER WHO YOU ARE. ON TOP OF THAT, HE'S SO FOCUSED ON HIS WORK THAT HE HAS THE ABILITY TO BLOCK OUT THE REST OF THE WORLD. SO HIS HAIR GETS DISHEVELED, HIS CLOTHES ARE ALL OVER THE PLACE. THEY BECOME OBSTACLES FOR HIM, SO HIS MOVEMENT STYLE IS SLOPPY, WITH OVERLAPPED ACTION.

ZACH PARRISH, *HEAD OF ANIMATION*

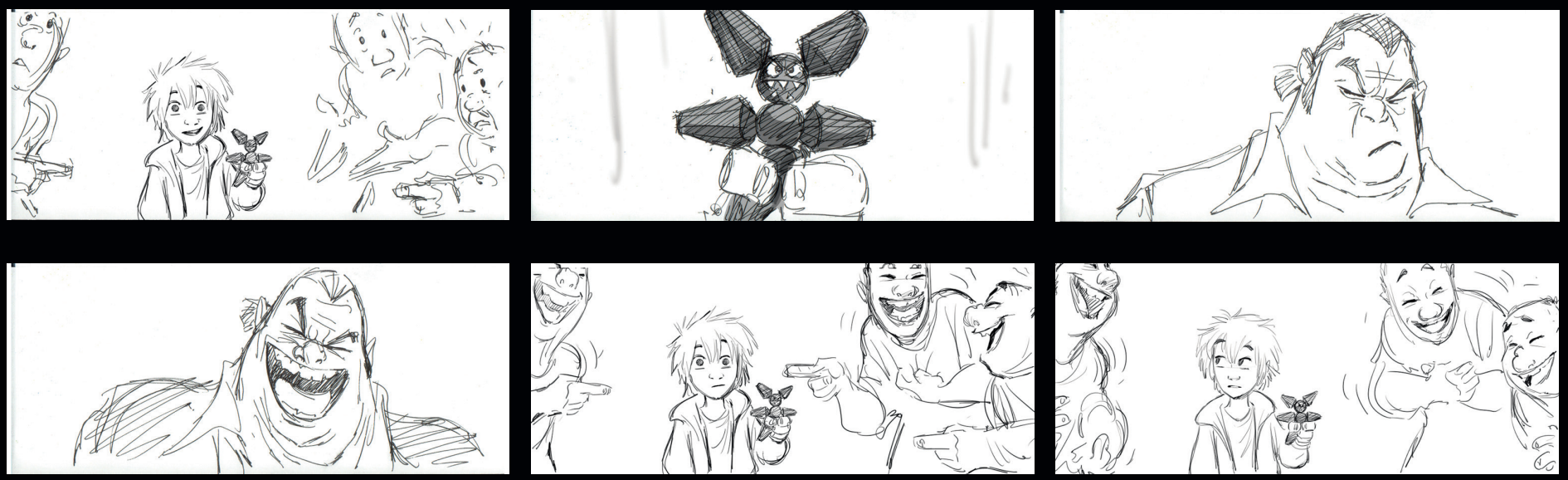
SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL

THERE IS A SENSE OF ALIENATION THAT COMES WITH THE REALIZATION THAT YOU ARE NOT LIKE YOUR PEERS, AND I LIKE THAT ABOUT HIRO. HE HAS A DEEPLY ANALYTICAL MIND BUT IS OFTEN OBLIVIOUS TO THINGS OTHER PEOPLE TAKE FOR GRANTED. HIS BRAIN WORKS DIFFERENTLY.

HANK DRISKILL, *TECH SUPERVISOR*

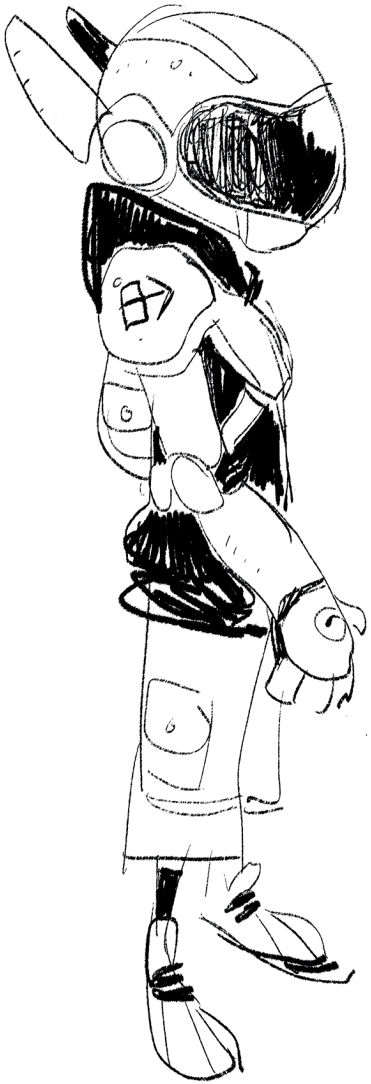
PAUL FELIX / DIGITAL



JOHN RIPA / DIGITAL

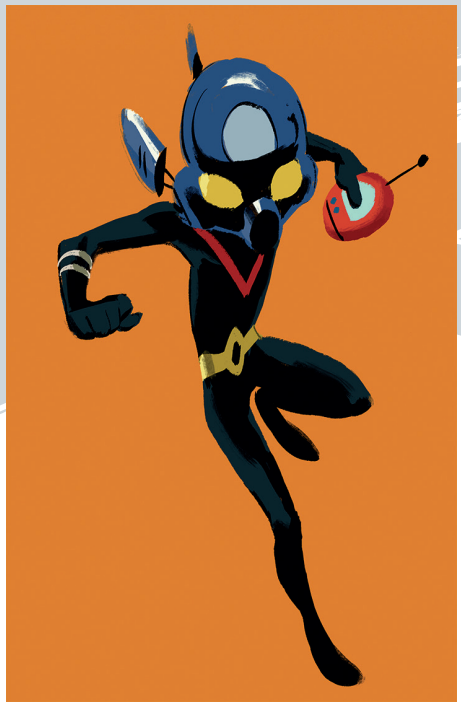
TO KEEP HIRO'S TEENAGE BOY QUALITY, EVEN AFTER HE BECOMES A SUPER HERO, I THOUGHT OF DREAMS ABOUT FLYING, HOW CLOTHES FLAP IN THE WIND. I WANTED TO TAP INTO THAT AWESOME FEELING FOR HIRO'S SUPERSUIT.

SHIYOON KIM, *CHARACTER DESIGNER*



SHIYOON KIM / DIGITAL

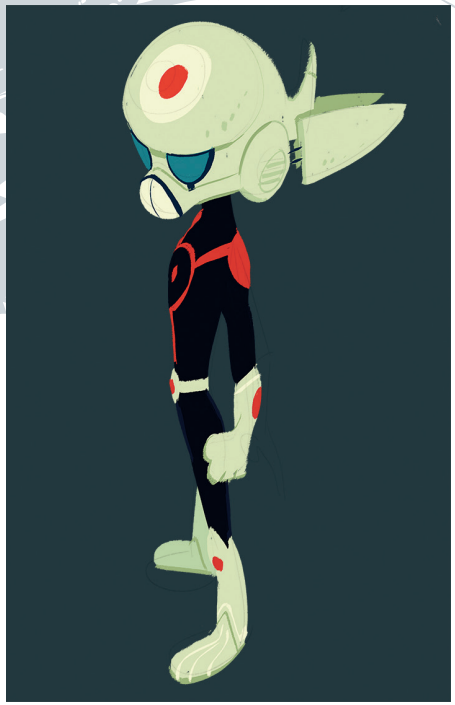
SHIYOON KIM / DIGITAL



SHIYOON KIM / DIGITAL

SHIYOON KIM / DIGITAL

SHIYOON KIM / DIGITAL



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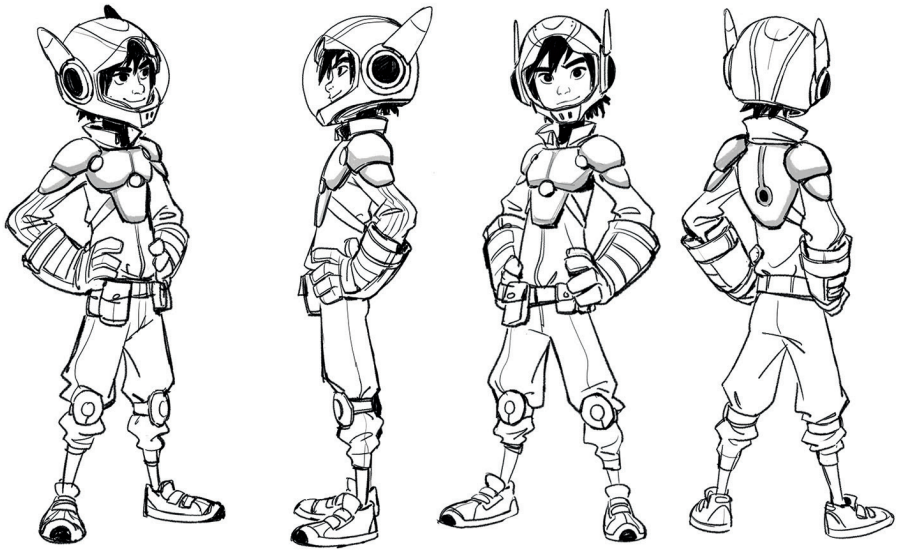
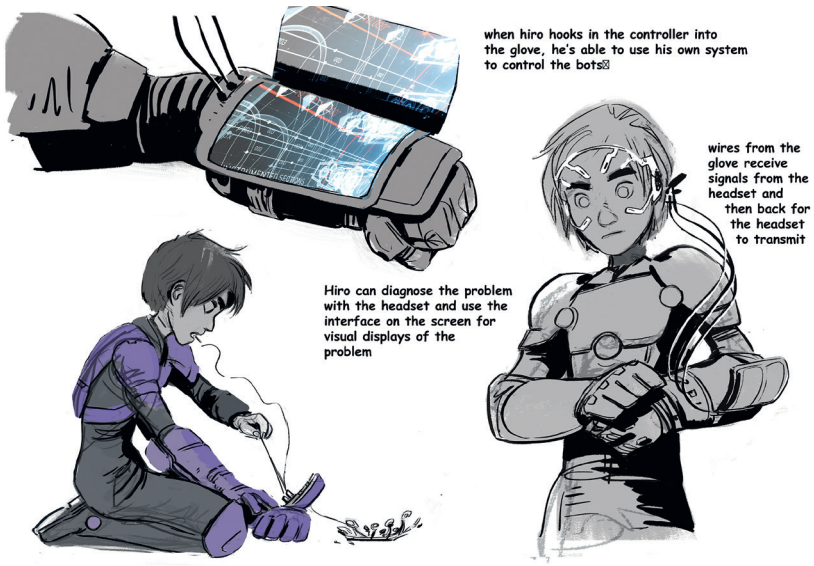


JIN KIM / DIGITAL



KEVIN NELSON / DIGITAL

HIRO'S SUPERSUIT IS PURPLE BECAUSE OF BAYMAX. I TRIED A BLUE ONE AND A RED ONE, BUT HE BLENDED INTO BAYMAX. WE NEEDED A PUNCH OF COLOR FOR HIRO TO STAND OUT.

LORELAY BOVE, *VISUAL DEVELOPMENT ARTIST*

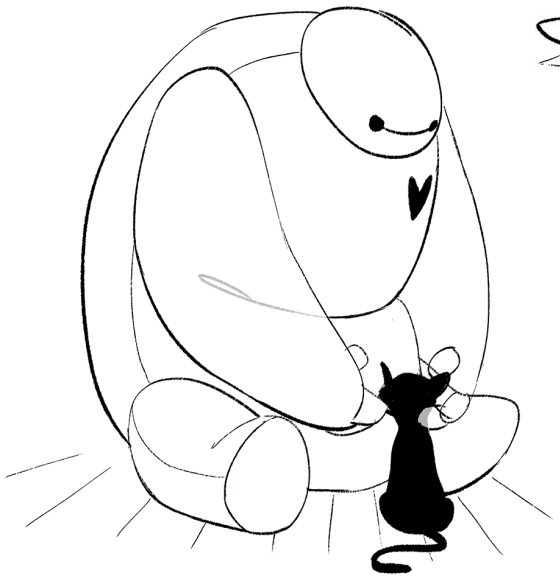
BAYMAX

Baymax the robot is "the heartbeat of the movie," says writer Robert Baird. "When Tadashi dies, Baymax becomes the stand-in for him." Directors Don Hall and Chris Williams knew that audiences had to fall in love right away if they were going to believe in a robot as a surrogate brother to Hiro. "[Visual development artist] Lisa Keene came up with the term huggable. She said you had to want to go up and squeeze him," says Hall.

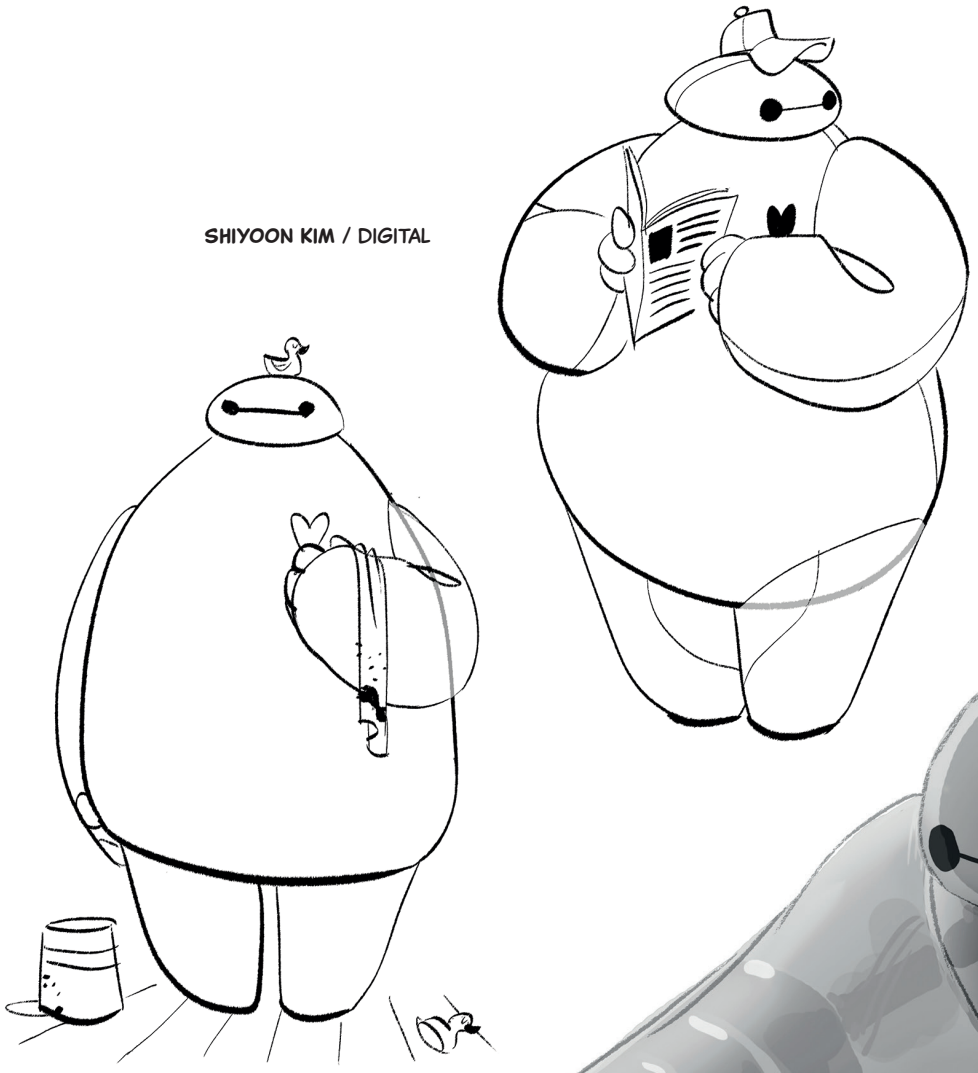
Hall and Williams were determined to design a robot that had never been seen on-screen before. Early on, Hall and a small team of filmmakers took a field trip to the Robotics Institute at Carnegie Mellon University. "Christopher Atkeson, a scientist there, was into inflatable robots. I knew I'd found Baymax when Chris showed me this crude vinyl, inflatable arm. I'd never seen anything like that."

Williams concurs. "Early on, there were different versions of what Baymax could be. I emphasized the idea that he is basically a newborn. Everything is new to him, and he can easily get confused by things. He has a sweetness and a naïve quality." Hall agrees. "Baymax was created for one single purpose and has no sense of malice. He looks at the world through, 'How can I help?'"

"We would play Baymax in a completely different way if he were a hard-shelled robot. There's a vulnerability, a sincerity, and just a blankness about him that works well with the vinyl concept," says production designer Paul Felix. "He's like a fat marshmallow man," laughs writer Dan Gerson. "The contrast between seeing Baymax in his initial form, and then seeing him in his fully armored-up super hero form—that transformation pulled me right in."



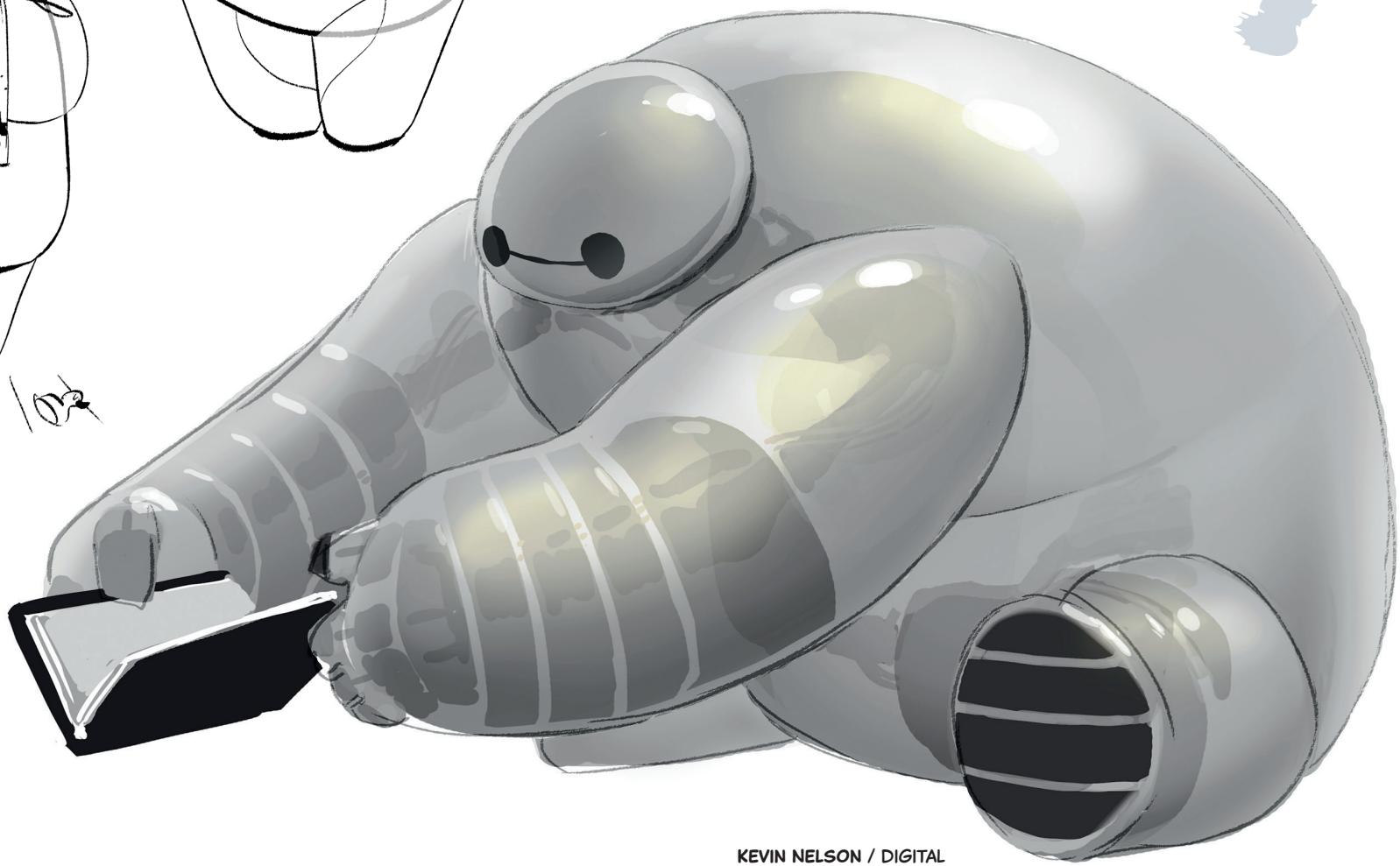
SHIYOON KIM / DIGITAL



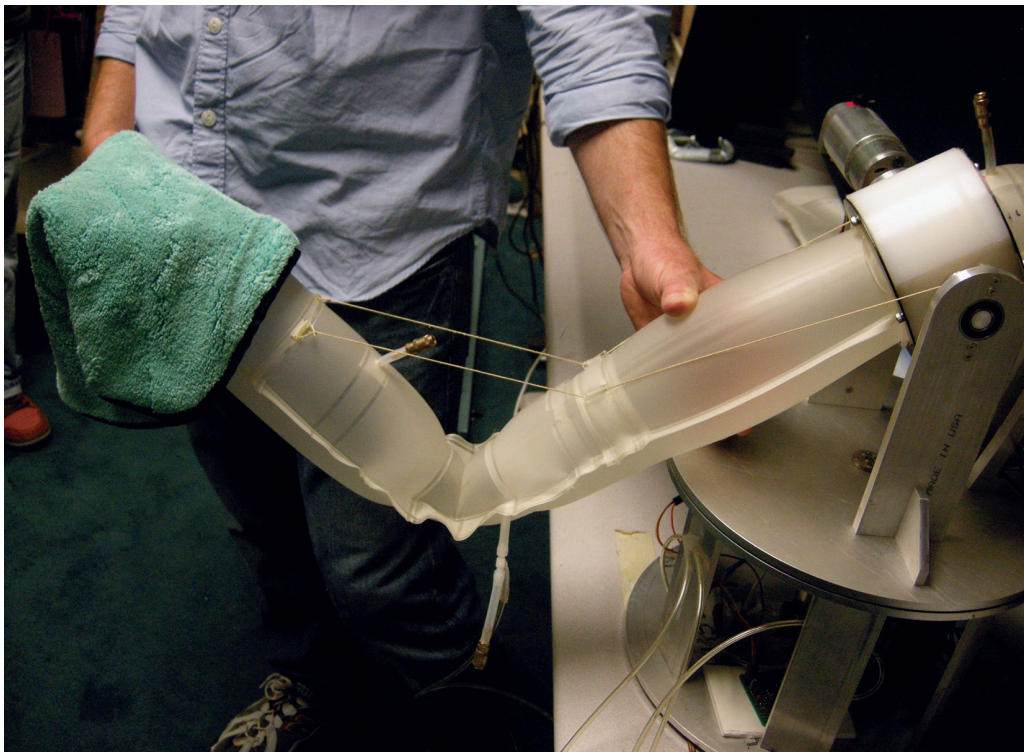
SHIYOON KIM / DIGITAL

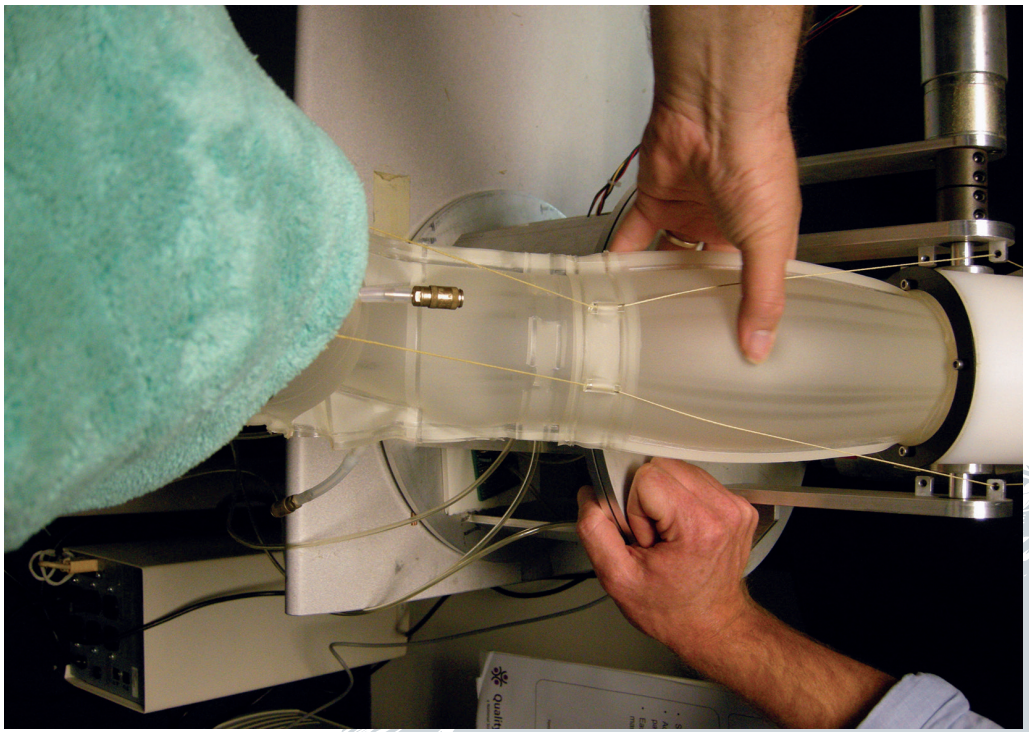
BAYMAX ISN'T A PERSON, HE IS A ROBOT, HE HAS A SET OF PROGRAMMING. HE DRIVES THE EMOTIONAL STORY, BUT HE DOESN'T HAVE ANY EMOTIONS.

HANK DRISKILL, *TECH SUPERVISOR*



KEVIN NELSON / DIGITAL



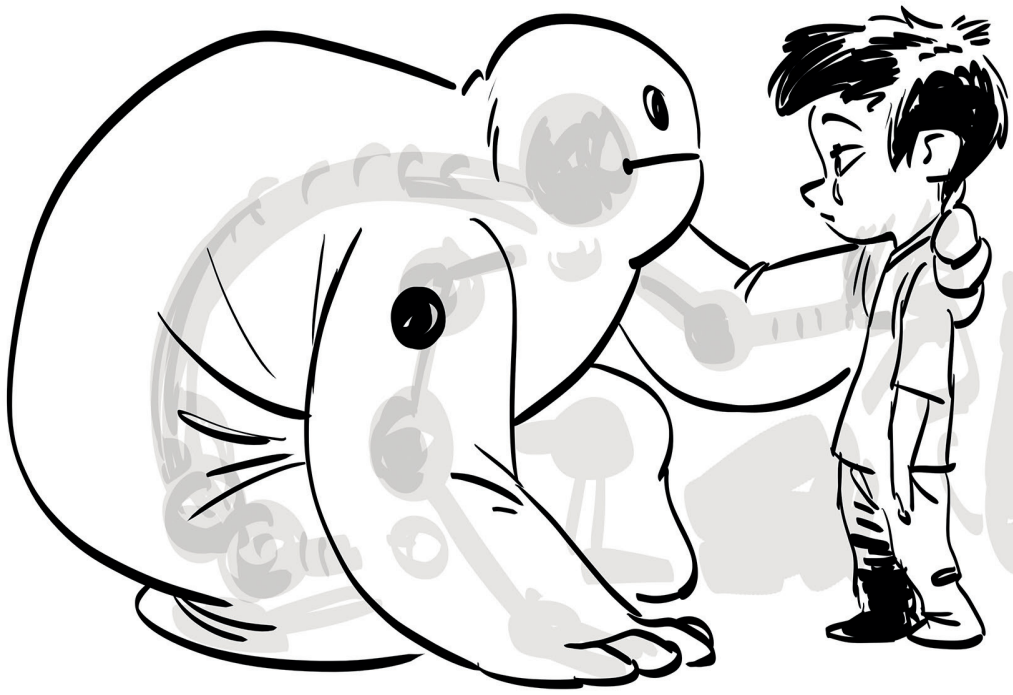


JOE MATEO / PHOTOGRAPHS

CHRIS WILLIAMS / DIGITAL

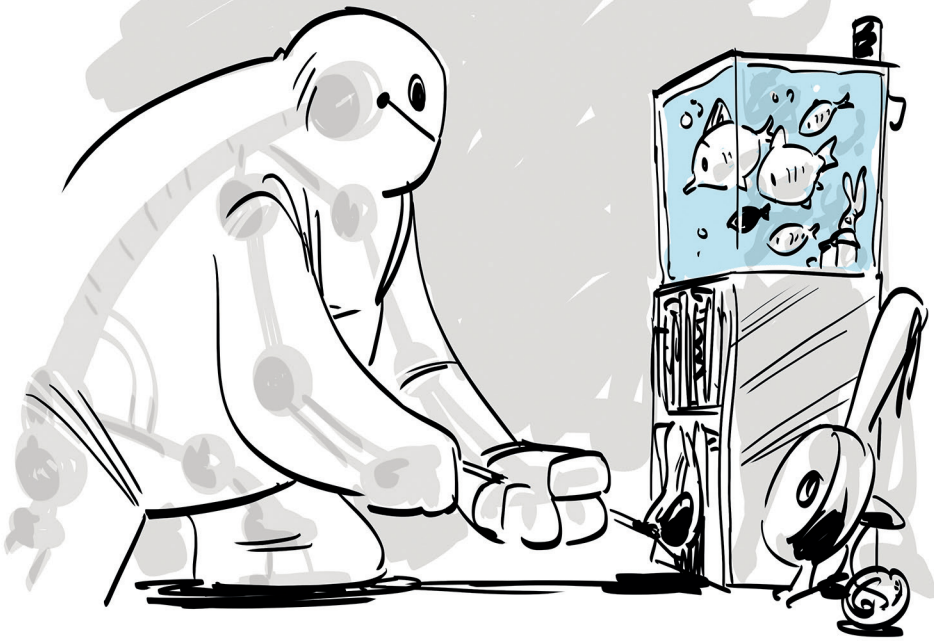
A ROBOT MADE OUT OF A HARD MATERIAL CAN INJURE SOMEBODY BECAUSE IT CAN'T GAUGE HOW MUCH PRESSURE IT'S APPLYING. SOFT, PLIABLE ROBOTS ARE BETTER FOR HEALTH AND ELDERLY CARE BECAUSE THEY ARE LESS THREATENING AND LESS PRONE TO INJURING VULNERABLE PEOPLE.

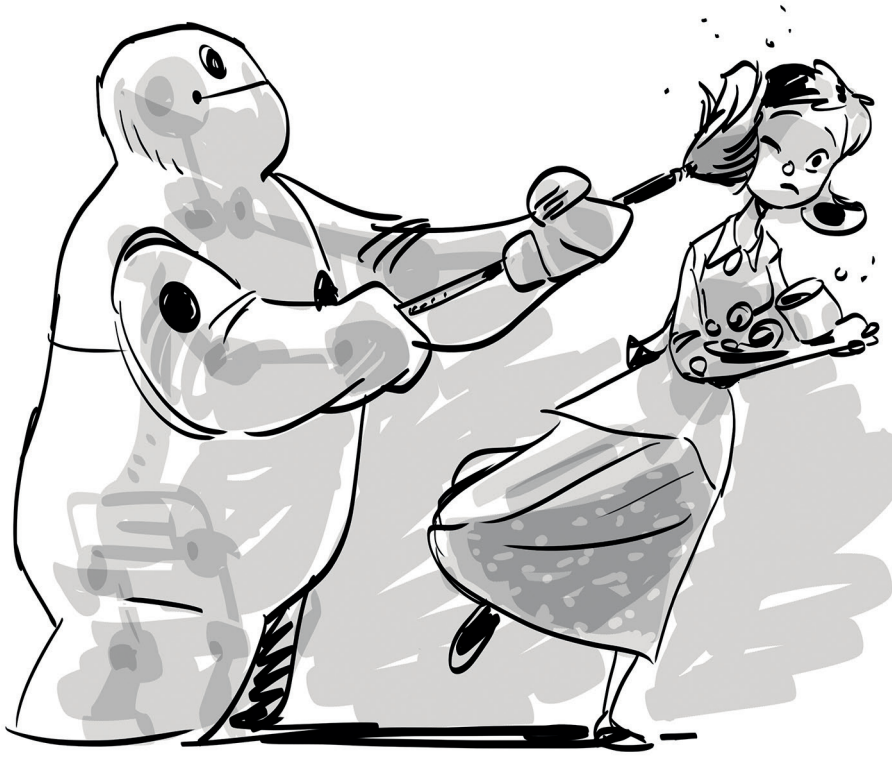
DON HALL, *DIRECTOR*



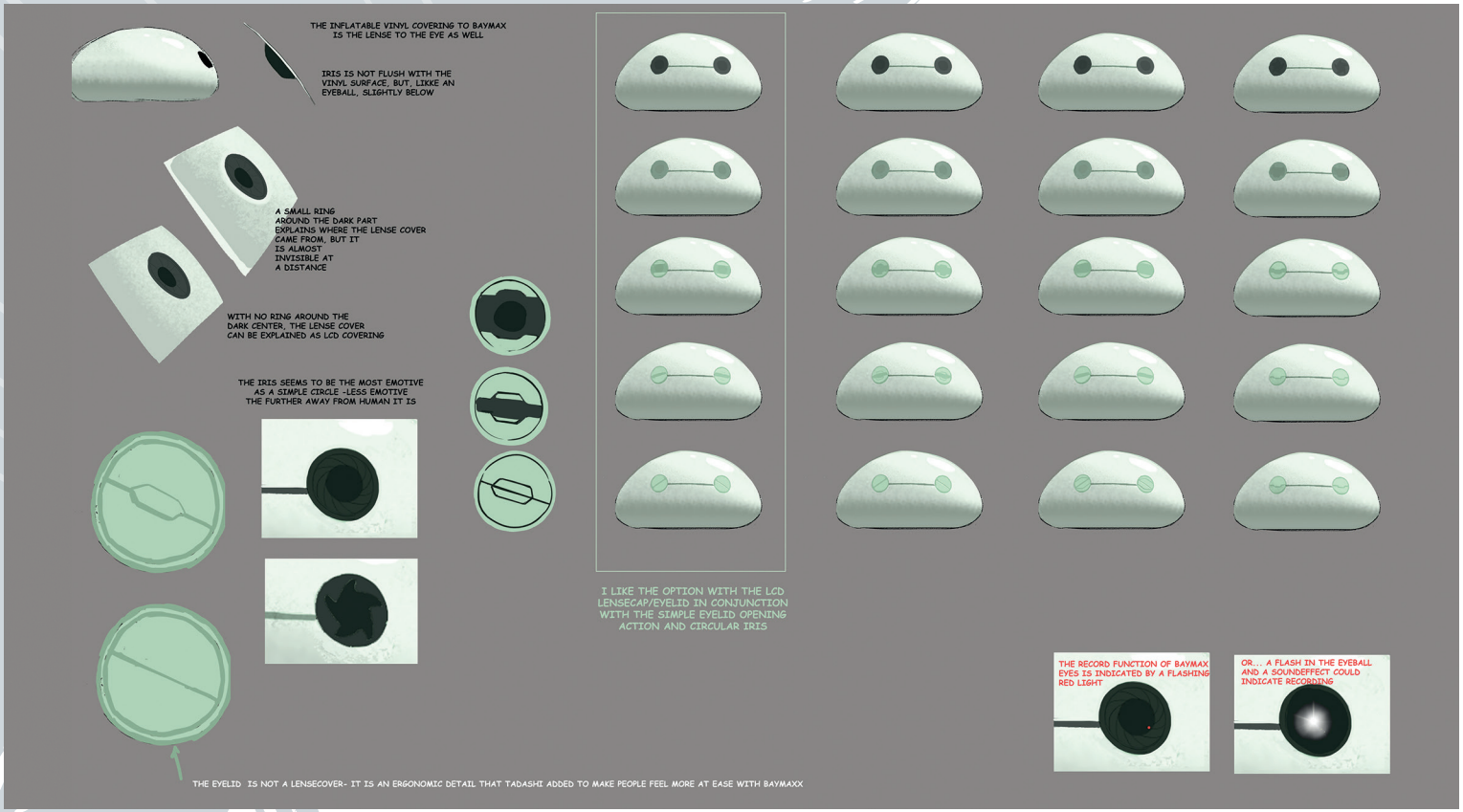
WE KNEW BAYMAX WAS GOING TO HAVE PROJECTION INSIDE HIS VINYL SO, TO TEST HOW IT WOULD LOOK, WE CUT A HOLE IN A BEACH BALL, PUT IN A PIECE OF GLASS, BLEW IT BACK UP AND PUT A PROJECTOR BEHIND IT. THE LIGHT BLEEDS THROUGH HIS LEGS AND ARMS AND FEELS REALLY BELIEVABLE.

ADOLPH LUSINSKY,
DIRECTOR OF CINEMATOGRAPHY, LIGHTING





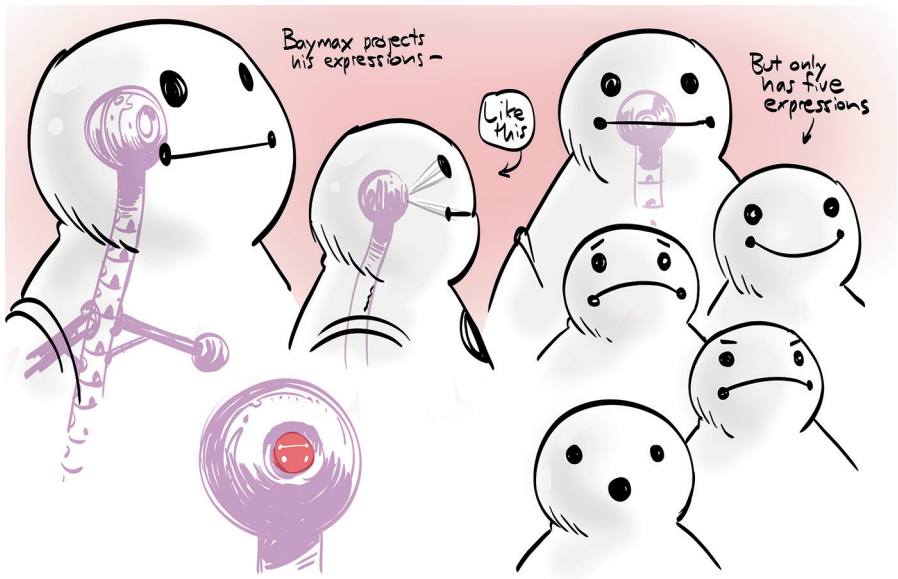
CHRIS WILLIAMS / DIGITAL



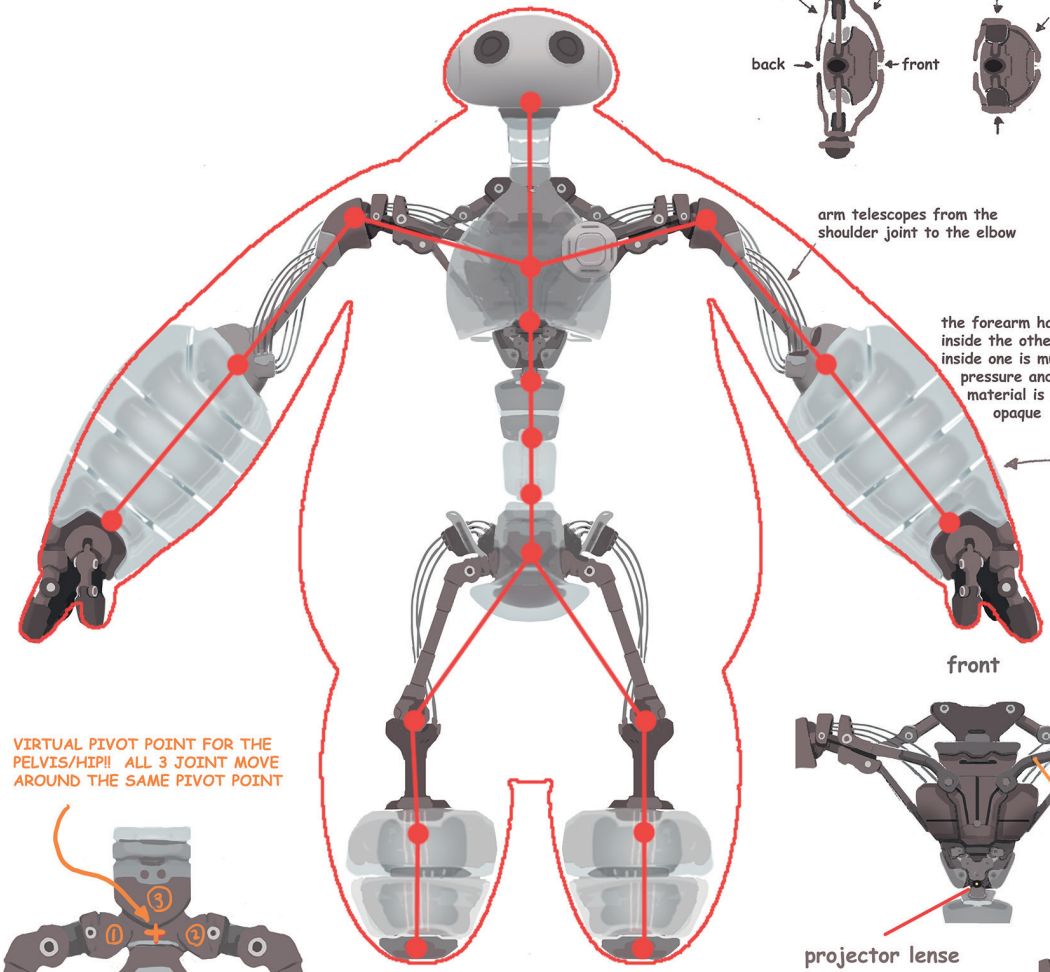
KEVIN NELSON / DIGITAL

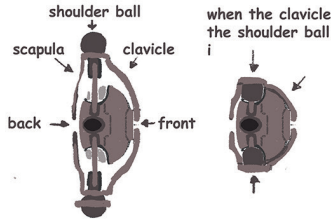
BAYMAX'S FACE, THE TWO DOTS WITH A LINE CONNECTING THEM, CAME FROM A JAPANESE BELL SHAPE. THERE ISN'T A FULL FACE THERE, WHICH MAKES HIM SEEM A LITTLE MORE ROBOTIC. IT ALLOWS THE AUDIENCE TO PROJECT ONTO HIM WHATEVER THEY NEED IN THAT MOMENT, AND SEEMS TO MAKE HIM EERILY COGNIZANT.

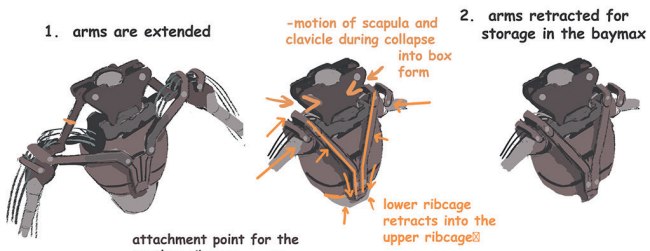
SHIYOON KIM, *CHARACTER DESIGNER*

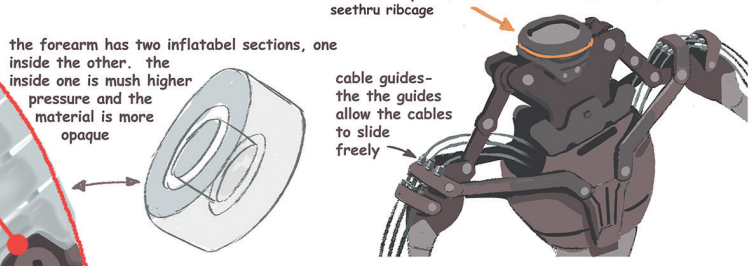


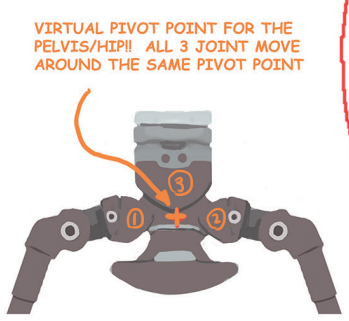
CHRIS WILLIAMS / DIGITAL

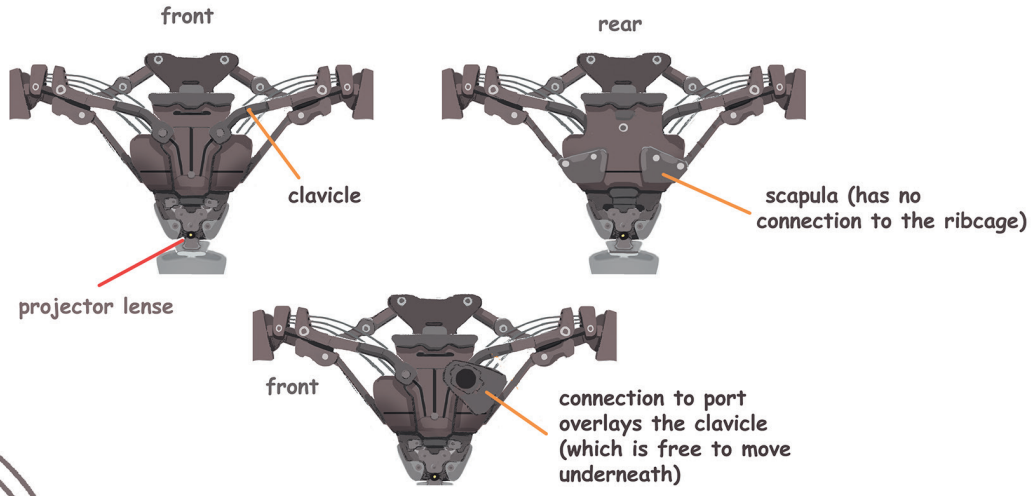


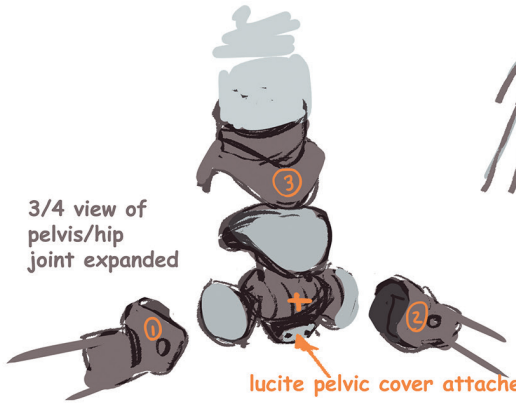


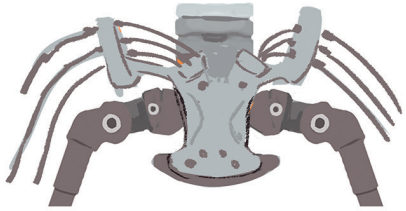






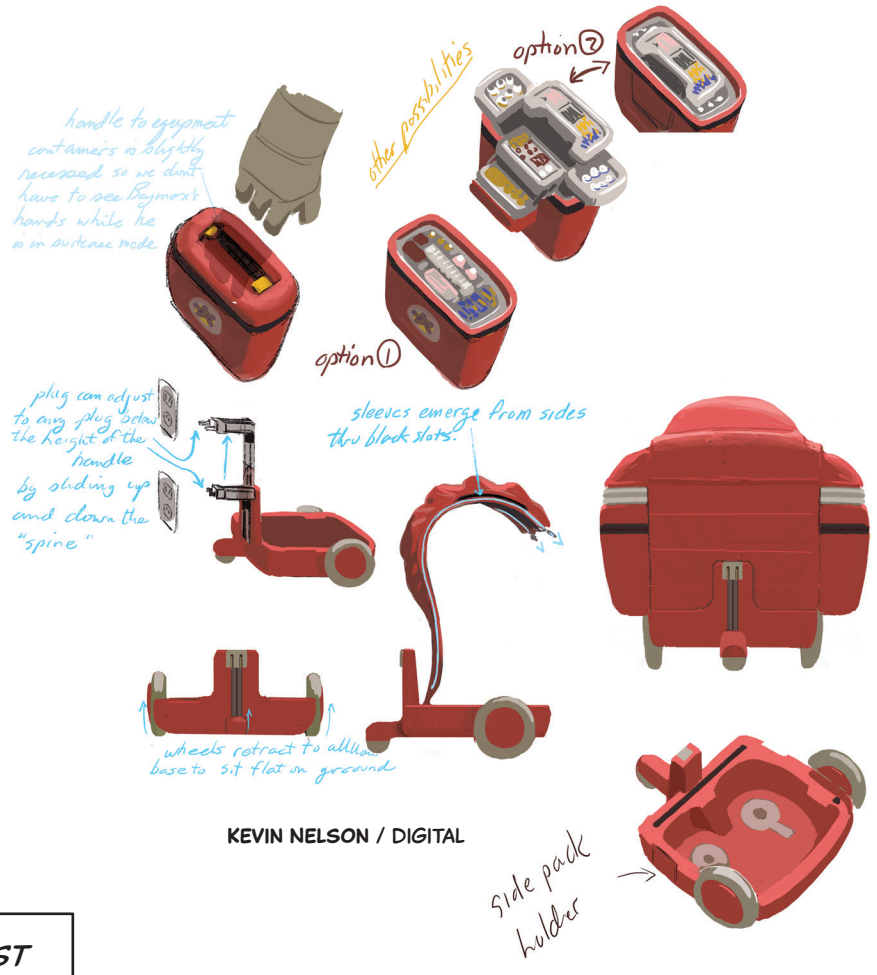






KEVIN NELSON / DIGITAL

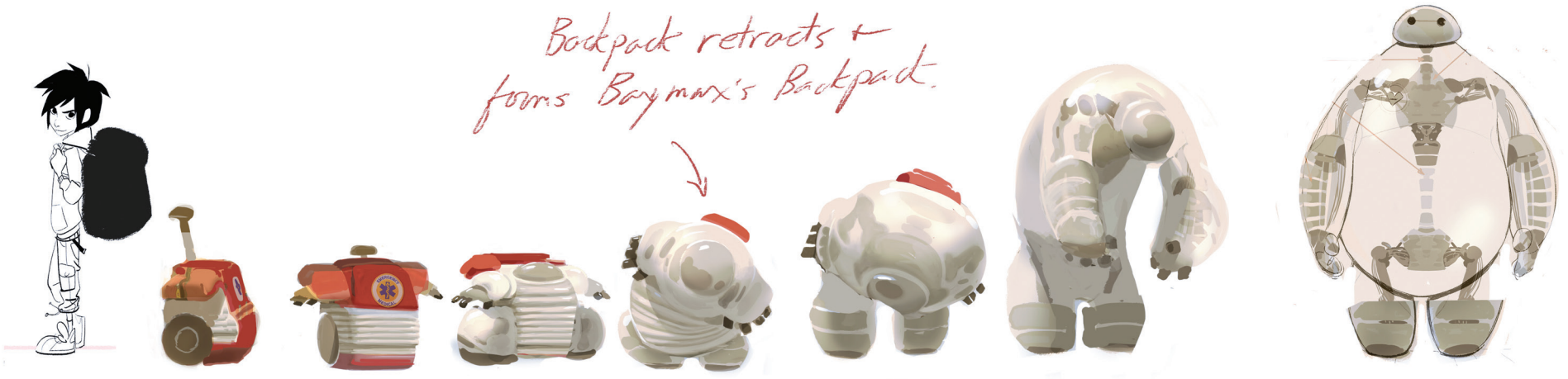
KEVIN NELSON / DIGITAL



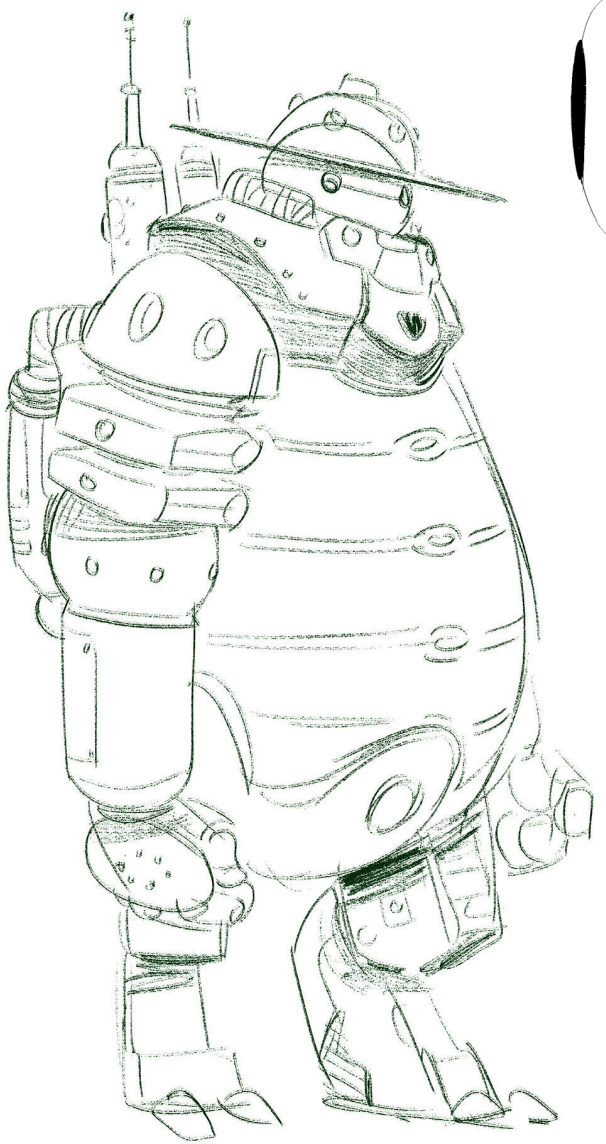
KEVIN NELSON / DIGITAL

BAYMAX HAD TO HAVE A SKELETON, BUT ALSO HAD TO FOLD UP INTO AN INCREDIBLY SMALL SPACE. WE LOOKED AT INCAN MUMMIES, AND MADE HIS VERTEBRAE, ARMS, AND LOWER LEGS DEFLATABLE, SO THEY WOULD DISAPPEAR WHEN HE WAS SHRUNK DOWN. ALL HIS OTHER BONES HAVE WAYS OF BENDING TO FIT HIS WHOLE BODY INTO THE TRAVELING CASE.

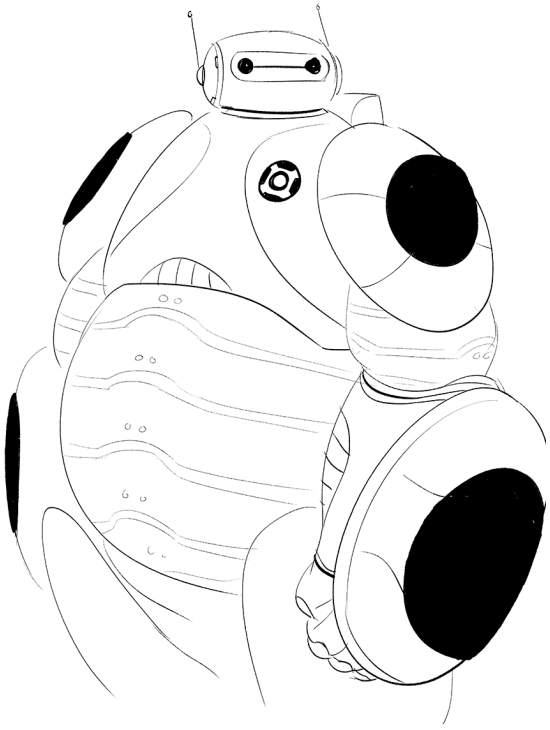
KEVIN NELSON, *VISUAL DEVELOPMENT ARTIST*



KEVIN NELSON / DIGITAL



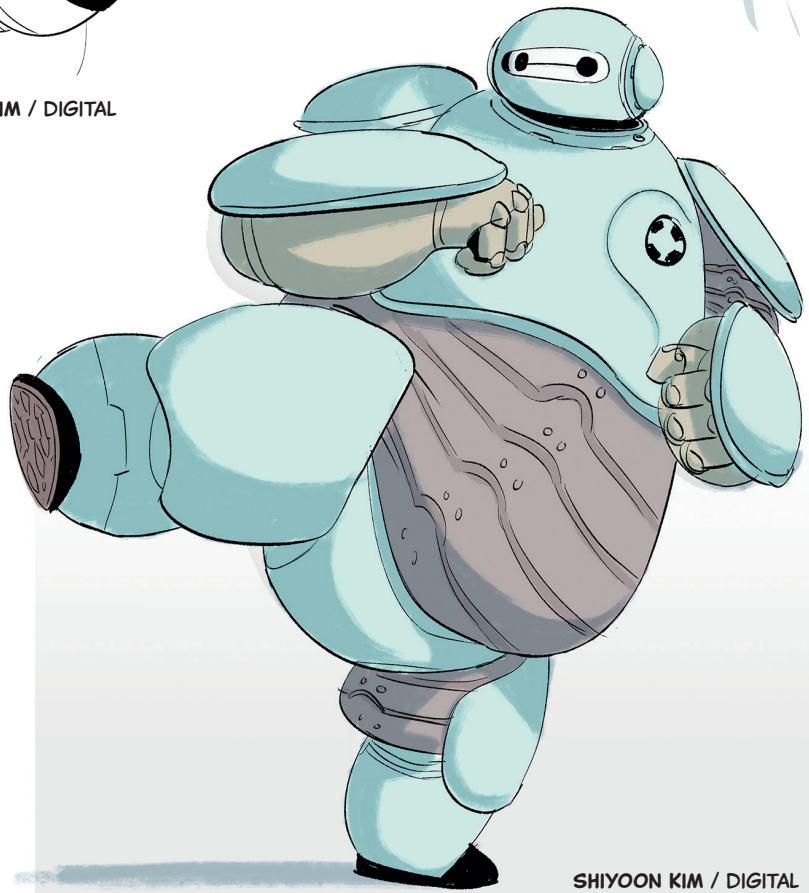
SHIYOON KIM / DIGITAL



SHIYOON KIM / DIGITAL

WE WANTED BAYMAX'S MOVEMENT AND POSING TO REFLECT HIS NATURE. WE LOOKED AT TODDLERS, BUT THEY SEEMED DRUNK. THEN WE FOUND A VIDEO OF BABY PENGUINS. THEY HAVE THESE CURIOUS NECK MOVEMENTS, THEIR WINGS ARE STUCK TO THEIR SIDES, AND THEY TAKE QUICK, SHARP LITTLE STEPS THAT FEEL BOTH MECHANICAL AND ADORABLE. THEY WERE THE PERFECT MODEL FOR BAYMAX.

ZACH PARRISH, *HEAD OF ANIMATION*

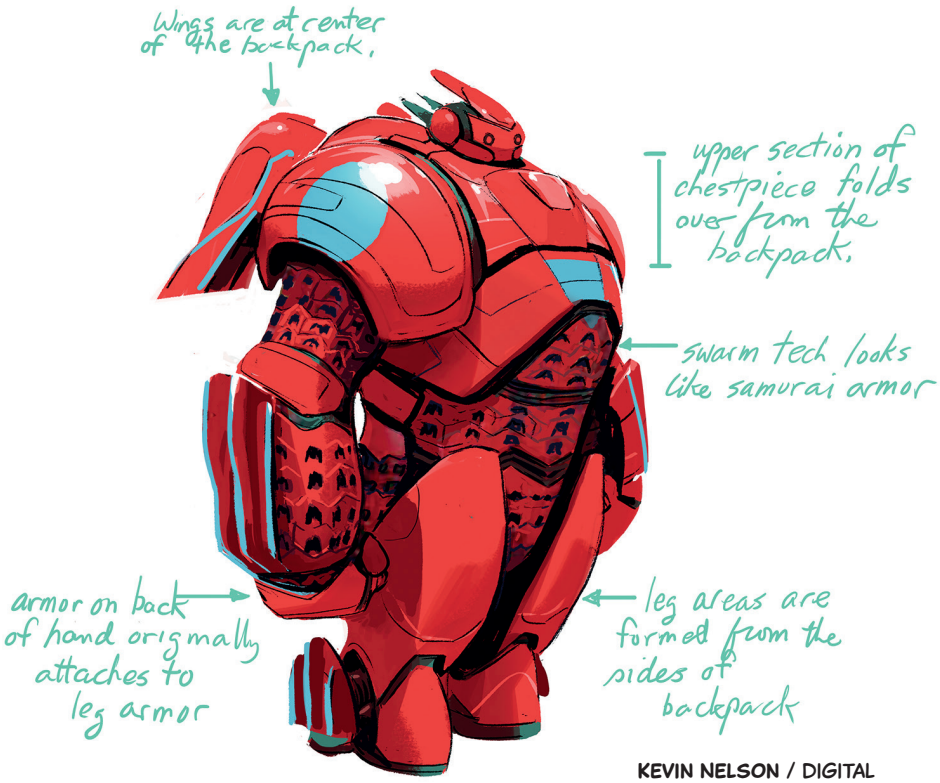


SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL

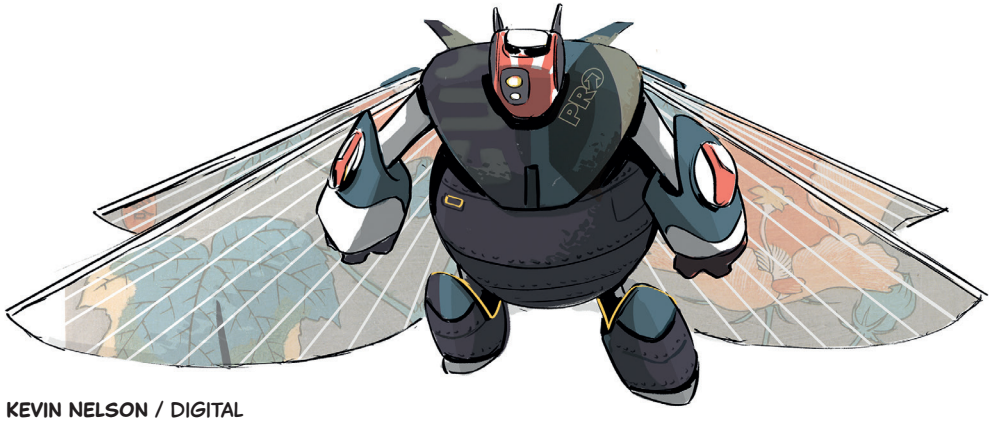
WE MET WITH J MAYS, THEN THE GLOBAL DESIGN CHIEF FOR FORD, WHO INSPIRED US TO SIMPLIFY BAYMAX'S ARMOR, WITH SIMPLER SHAPES AND CLEANER LINES INFLUENCED BY AUTO DESIGN. HIS EDGES ARE ROUNDER AND HE FEELS MORE STREAMLINED, WHICH ECHOES THROUGH THE REST OF THE TEAM'S SUPERSUITS.

ROY CONLI, *PRODUCER*



KEVIN NELSON / DIGITAL

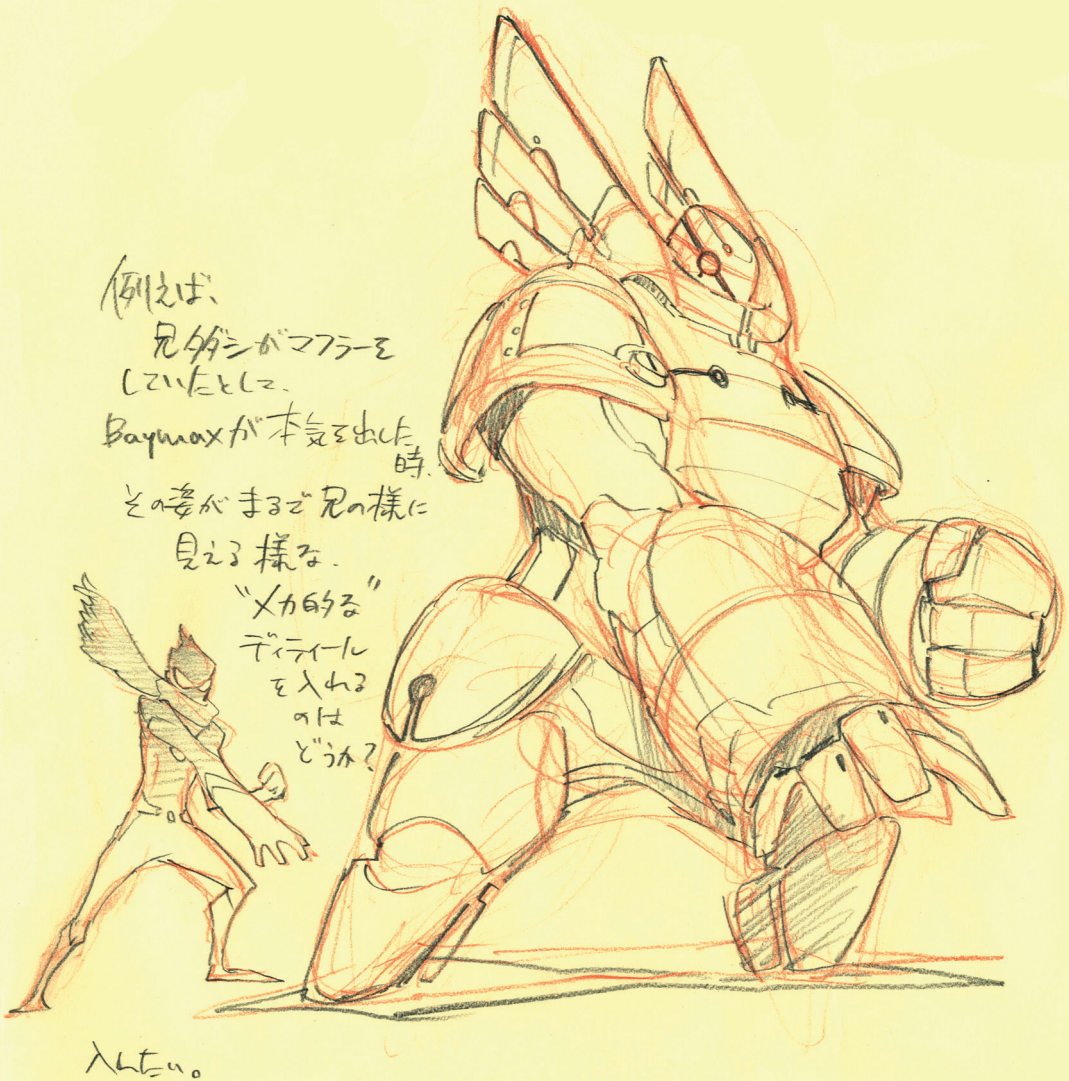
KEVIN NELSON / DIGITAL



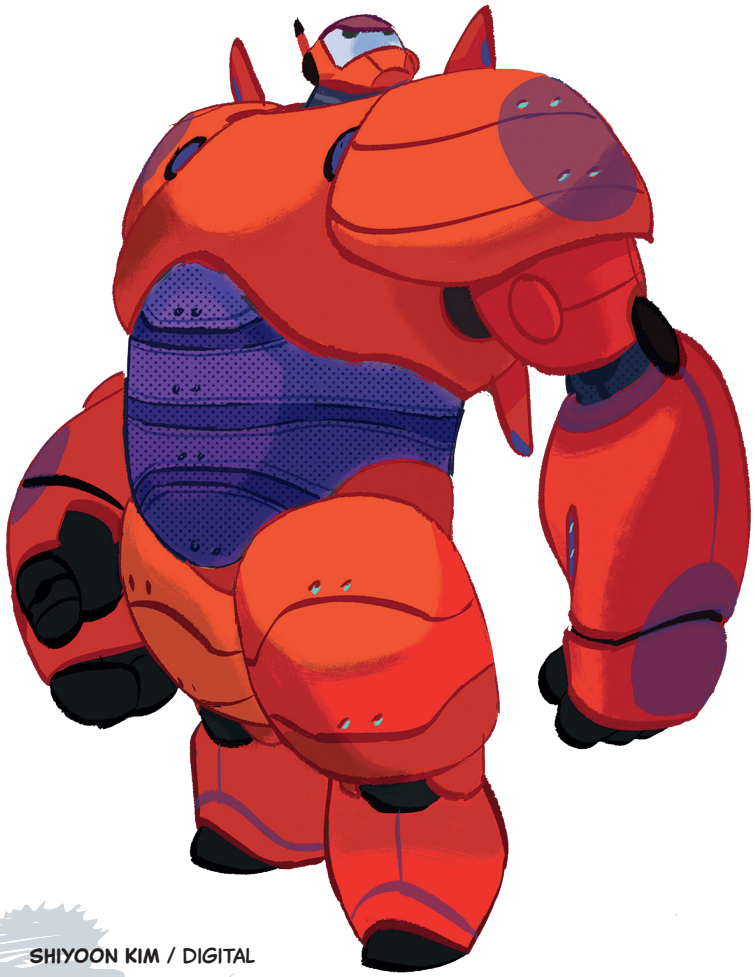
KEVIN NELSON / DIGITAL

THE WINGS WERE THE MOST DIFFICULT PART OF THE SUPERSUIT BECAUSE THEY HAVE TO DO SO MANY THINGS. THEY HAVE TO FOLD UP REALLY TINY, FOLD OUT TO FLY, MOVE IN LOTS OF DIFFERENT WAYS, AND ALLOW HIRO TO ATTACH SOMEWHERE. THEY'RE LIKE BIRD WINGS WITH MECHANICAL FEATHERS.

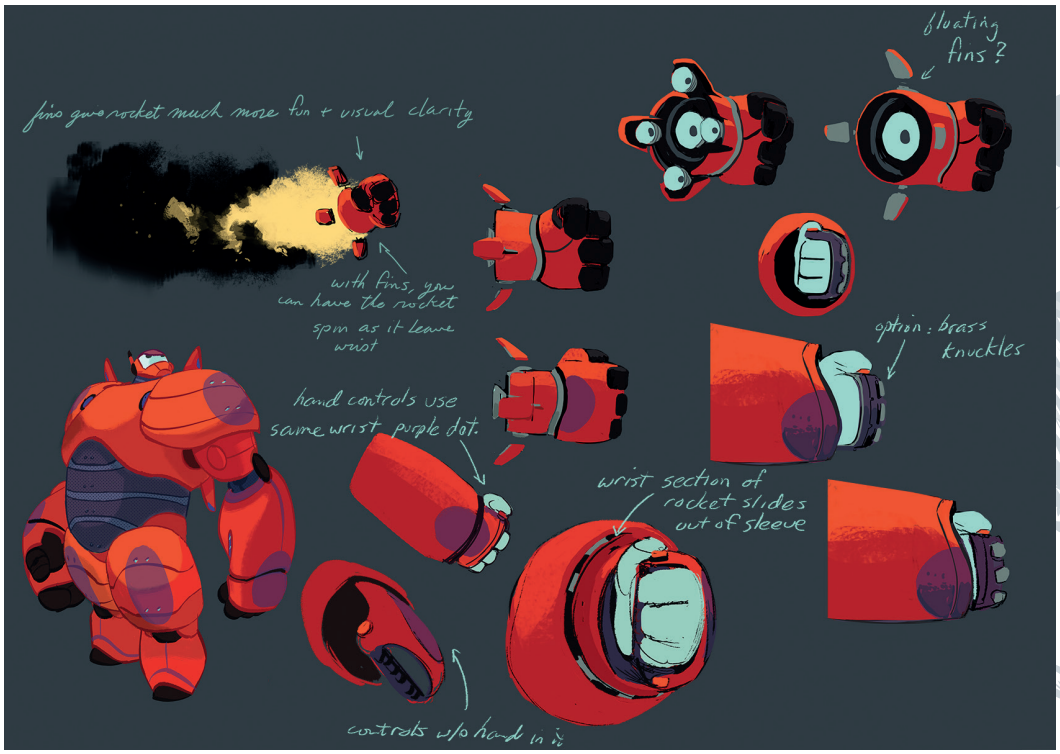
KEVIN NELSON, *VISUAL DEVELOPMENT ARTIST*



SHIGE KOYAMA / DIGITAL



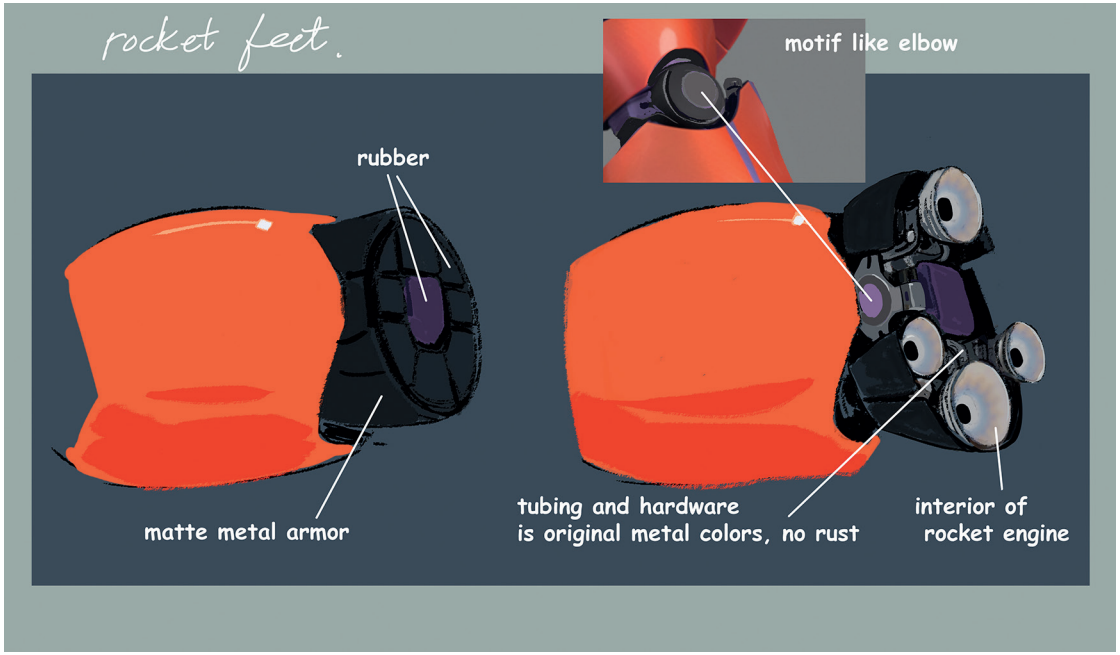
SHIYOON KIM / DIGITAL



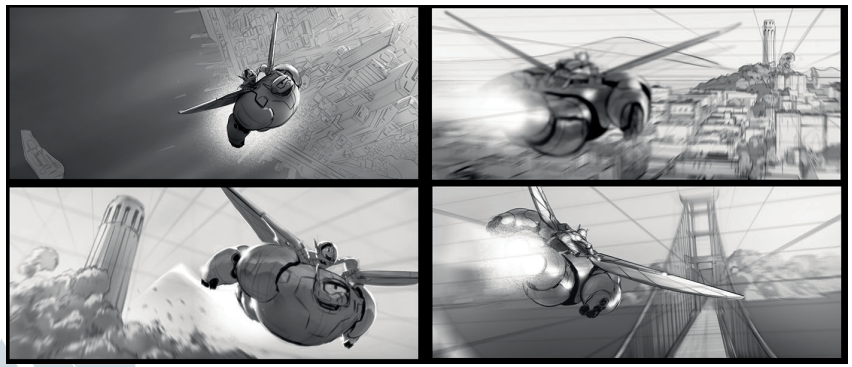
KEVIN NELSON / DIGITAL

WE DEVELOPED THRUSTERS SO THAT BAYMAX CAN FLY. WE DESIGNED A PLASMA-LIKE CONTRAIL THAT IS A BLUE-GREEN STREAK BEHIND HIM WHEN HE'S FLYING. IT HELPS YOUR EYE FOLLOW HIM, AND GIVES HIM A BIT OF FLAIR THAT IS A LITTLE CUTTING EDGE AND NOT JUST DIRTY EXHAUST.

MICHAEL KASCHALK,
HEAD OF FX ANIMATION



KEVIN NELSON / DIGITAL



RYAN LANG / DIGITAL

BAYMAX'S SOFT, SQUISHY VINYL HAD TO BE STRONG ENOUGH TO SUPPORT HIS RIGID SUPERSUIT. ITS ARMOR IS A BUNCH OF SHELLS THAT MOVE AROUND EACH OTHER LIKE A MAGNET, ATTRACTING OR REPELLING WITH GREAT FORCE.

KEVIN NELSON,
VISUAL DEVELOPMENT ARTIST

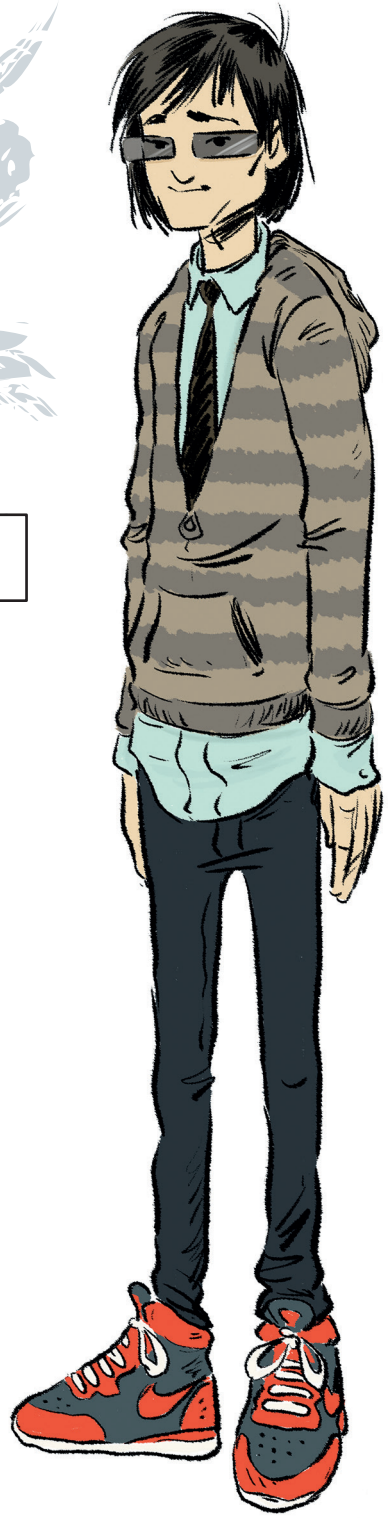
SHIYOON KIM / DIGITAL

TADASHI

TADASHI IS A ROCK WHO GROUNDS HIRO. HIS DESIGN REINFORCES THAT. HE HAS BROAD, STRONG SHOULDERS, HE'S VERY CLEAN AND SIMPLE. HE'S SINCERE AND SWEET WITHOUT ANY HIDDEN MOTIVATION. HE'S JUST A GOOD BIG BROTHER.

ZACH PARRISH, *HEAD OF ANIMATION*

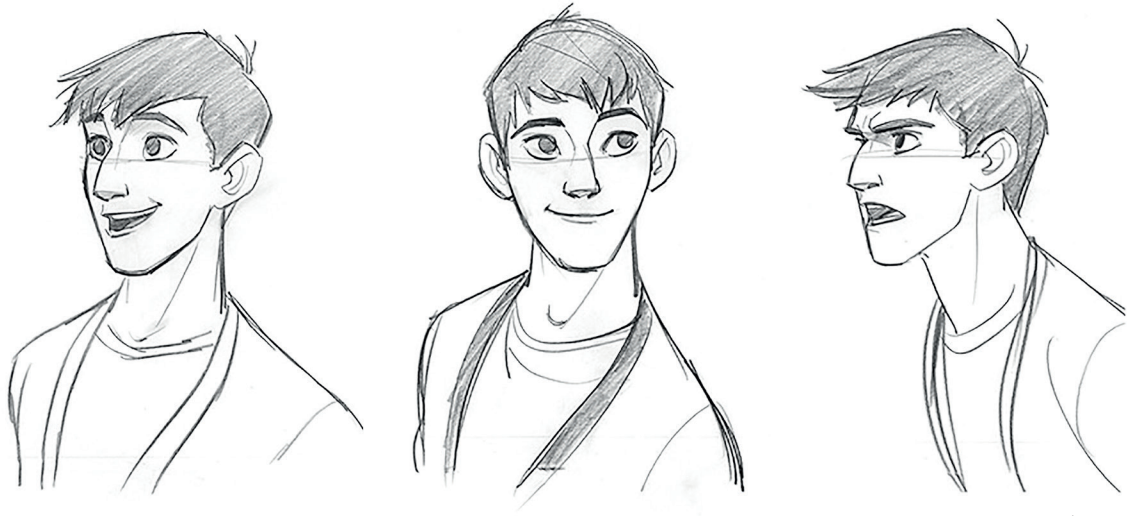
SHIYOON KIM / DIGITAL



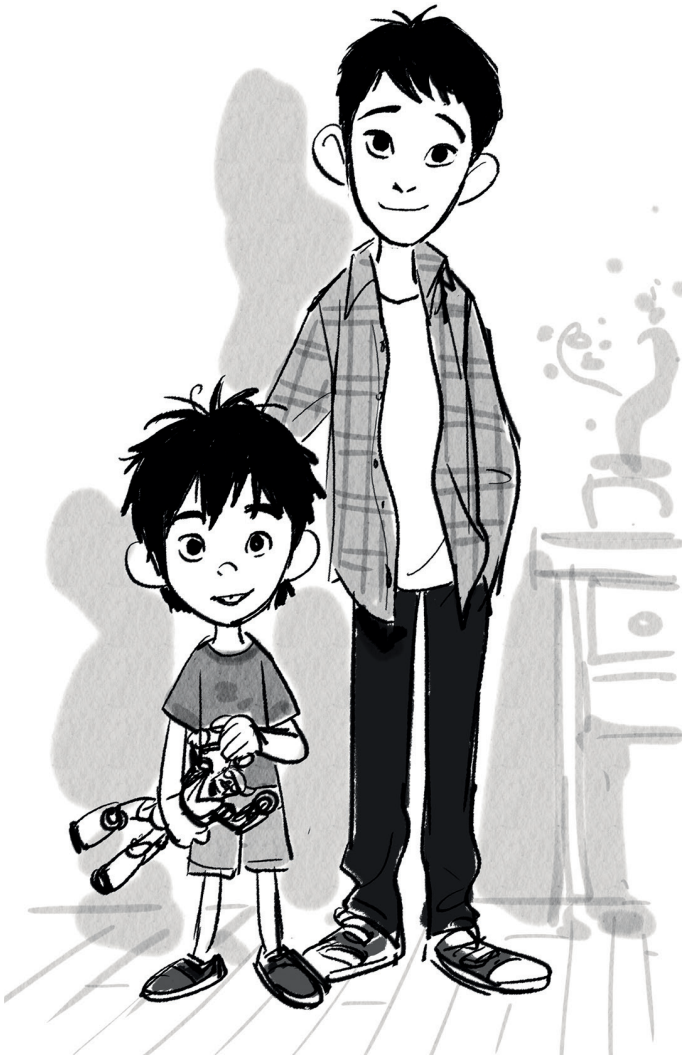
DON HALL / DIGITAL

SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL



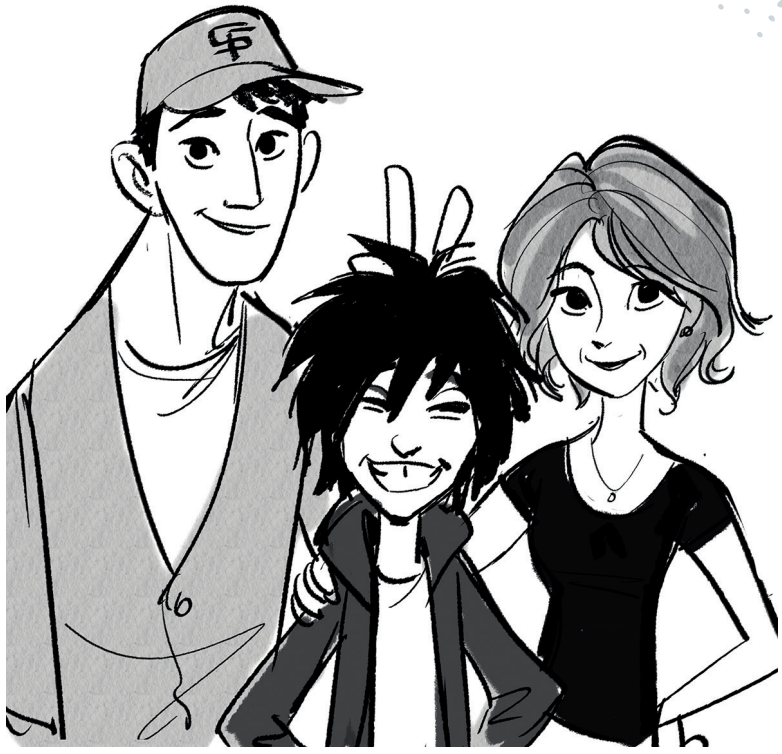
JIN KIM / DIGITAL



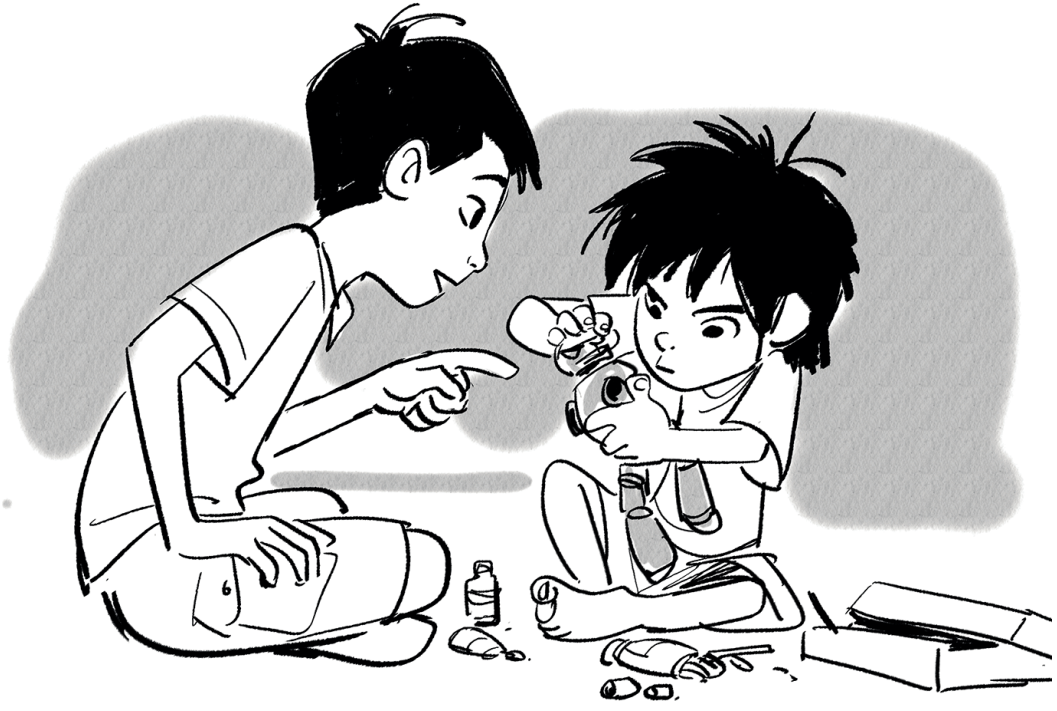
JIN KIM / DIGITAL

WE WANTED A REAL RELATIONSHIP BETWEEN TADASHI AND HIRO. THEY'RE NOT TOO SENTIMENTAL WITH EACH OTHER, THEY WRESTLE AND BEAT ON EACH OTHER. BUT THEY'RE ALSO ROBOTICS STUDENTS, NOT FOOTBALL PLAYERS.

DON HALL, *DIRECTOR*



JIN KIM / DIGITAL



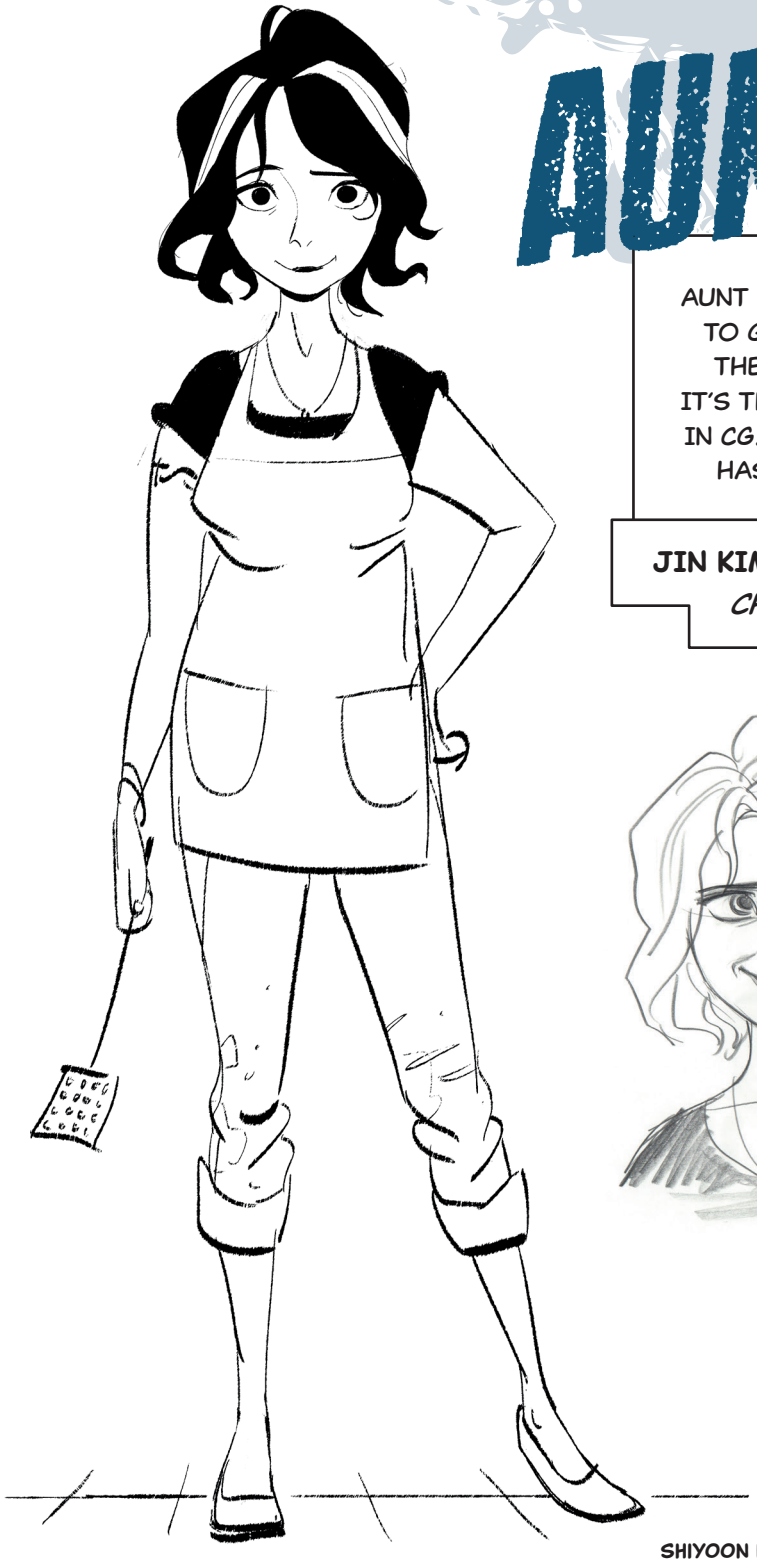
JIN KIM / DIGITAL

DEAN WELLINS / INK

JIN KIM / DIGITAL

JIN KIM / DIGITAL

AUNT CASS



AUNT CASS'S HAIR TOOK A LONG TIME TO GET JUST RIGHT. WE ANALYZED THE STRUCTURE, ALL THE LAYERS. IT'S THE BEST HAIR I HAVE EVER SEEN IN CG. IT LOOKS REALISTIC BUT STILL HAS THE UNIQUE DESIGN SHAPE.

JIN KIM,
CHARACTER DESIGN SUPERVISOR

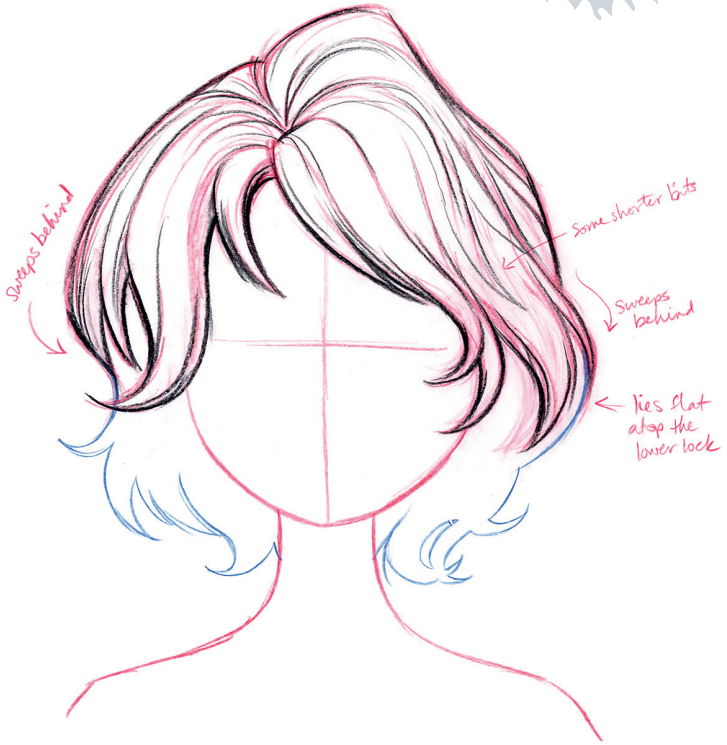
SHIYOON KIM / DIGITAL

JIN KIM / GRAPHITE

SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL

SHIYOON KIM / DIGITAL

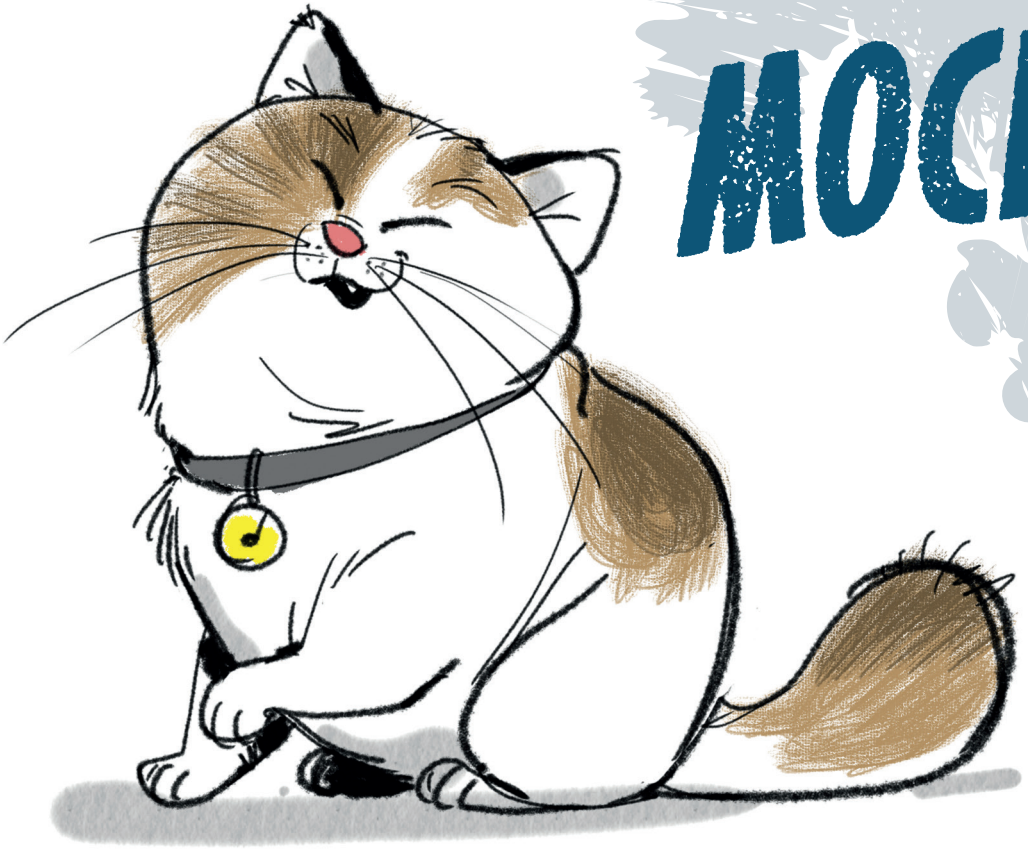


SARA AIRRIESS / GRAPHITE

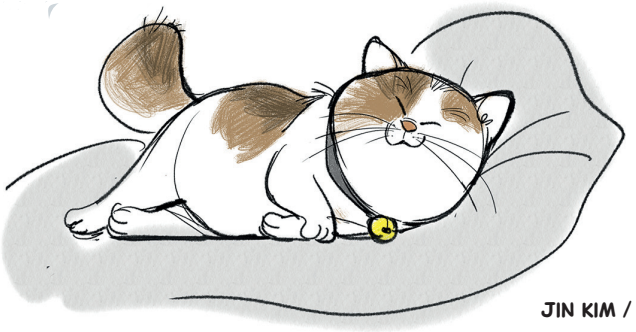
MOCHI

I THOUGHT THEY NEEDED A PET IN THIS MOVIE, SO I JUST KEPT DRAWING A CAT IN MY STORYBOARDS. THEN SHIYOON DID SOME DESIGNS, WHICH WENT INTO MODELING, AND THE CAT JUST KEPT GOING THROUGH THE PIPELINE! MOCHI BECAME REAL.

KENDELLE HOYER, *STORY ARTIST*



JIN KIM / DIGITAL

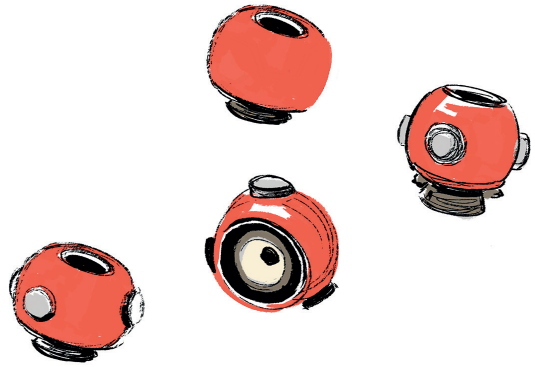


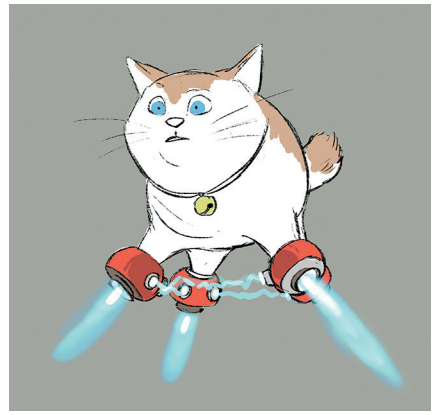
JIN KIM / DIGITAL

SHIYOON KIM / DIGITAL

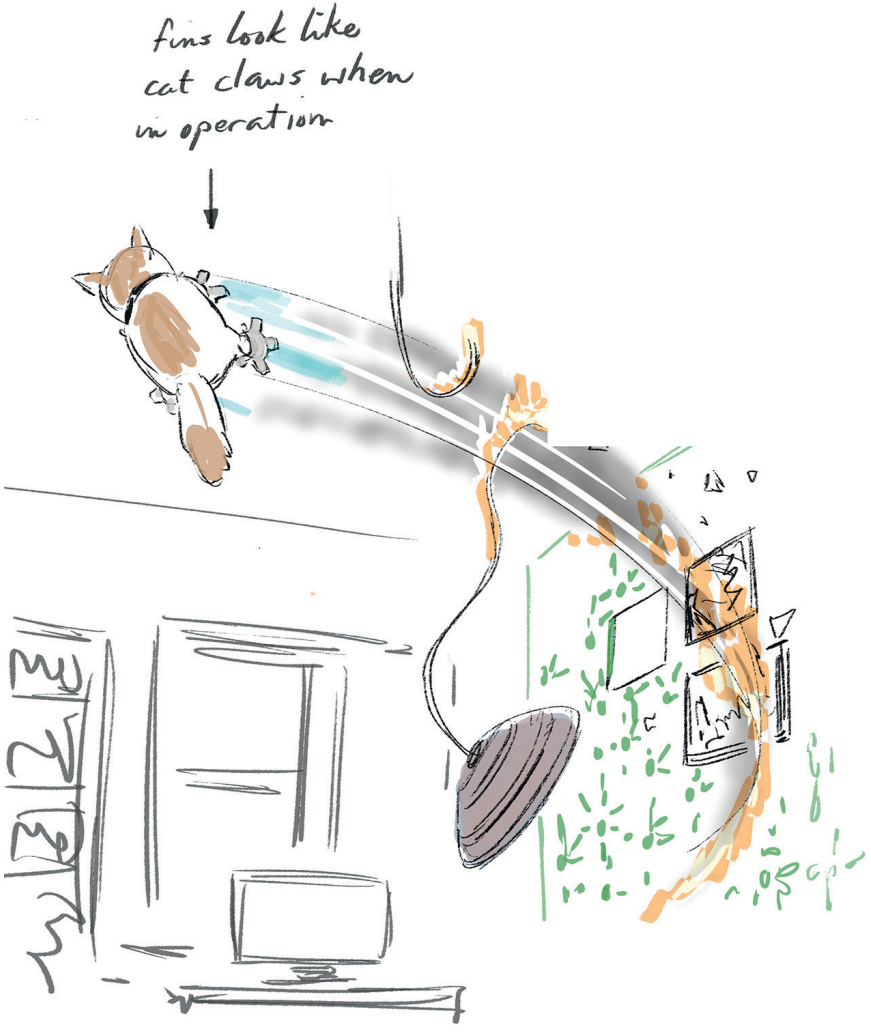
RYAN LANG / DIGITAL

JIN KIM / DIGITAL





KEVIN NELSON / DIGITAL



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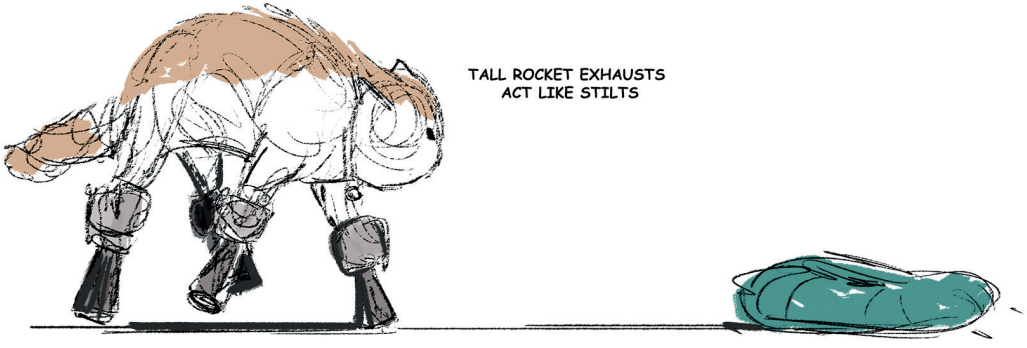


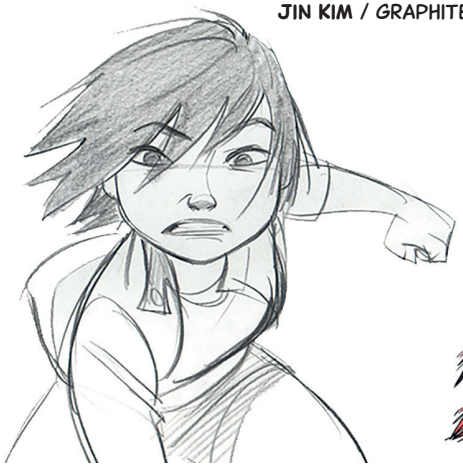
KEVIN NELSON / DIGITAL

SHIYOON KIM / DIGITAL

GO GO

KEVIN NELSON / DIGITAL

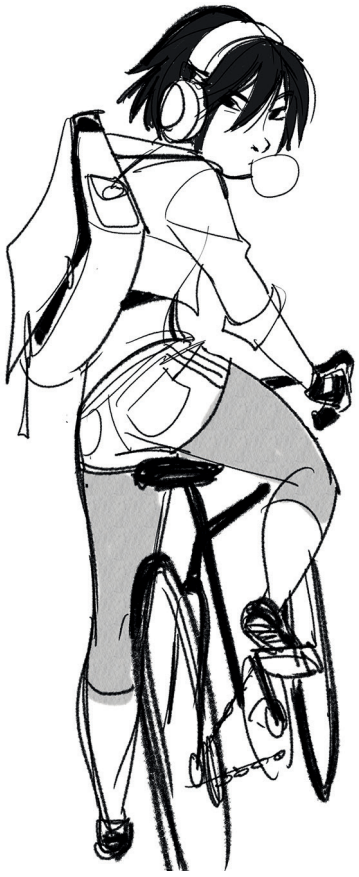
JIN KIM / GRAPHITE



SHIYOON KIM / DIGITAL

DON HALL / DIGITAL

SHIYOON KIM / DIGITAL



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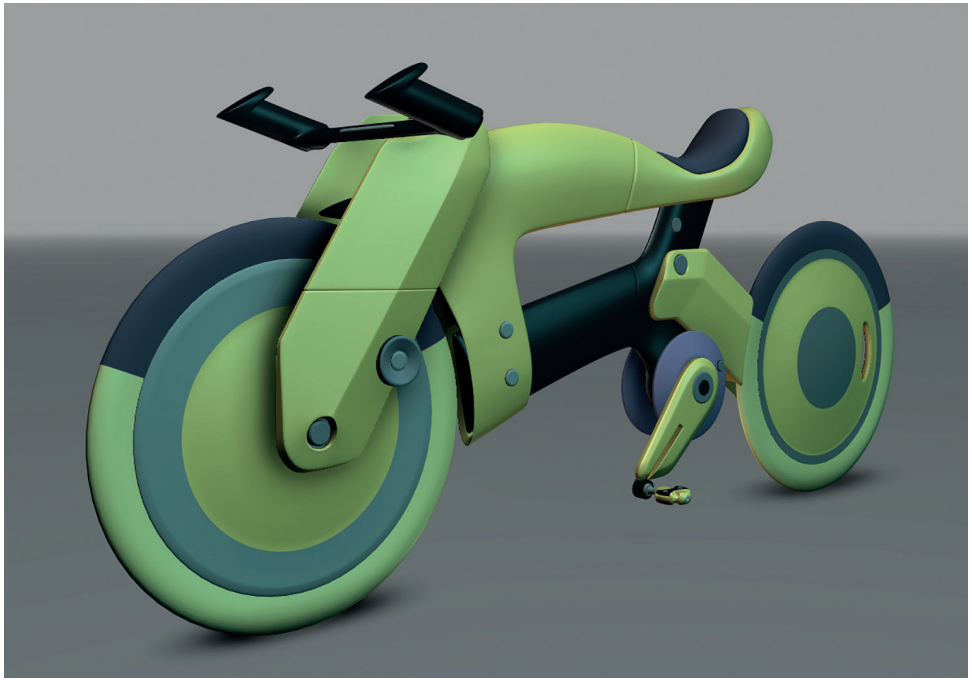


ZACHARY PETROC / DIGITAL

LORELAY BOVE / DIGITAL

GO GO IS A FEMALE CLINT EASTWOOD. SHE PICKS HER WORDS CAREFULLY AND CAN CUT SOMEONE DOWN TO SIZE LIKE THAT. SHE DOES NOT SUFFER FOOLS GLADLY.

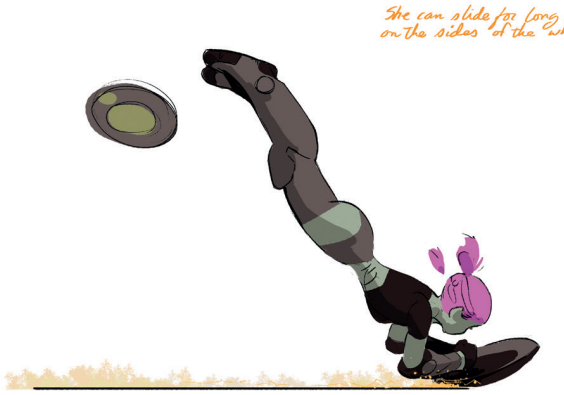
ROBERT BAIRD, *WRITER*

KEVIN NELSON / DIGITAL

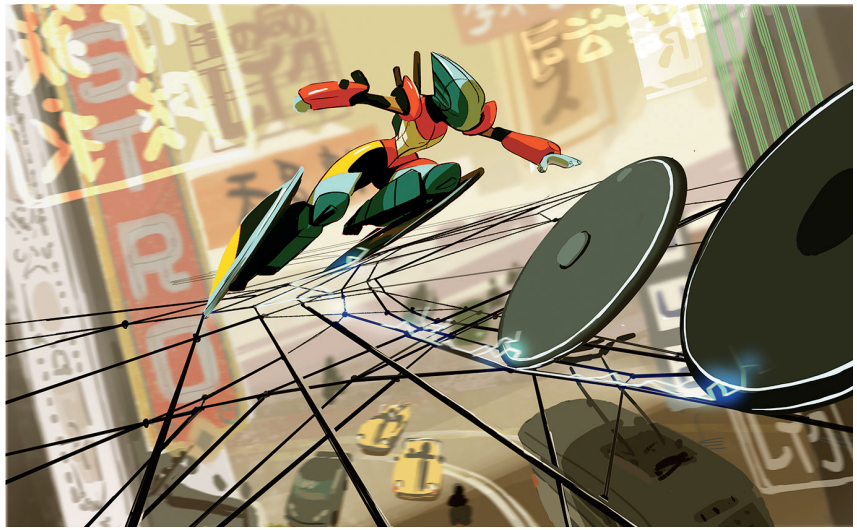
AT DIFFERENT STAGES OF THEIR DESIGN, GO GO'S WHEELS WERE POWERED BY ELECTRICAL LINES OVERHEAD, BY GRAVITY, BY GENERATORS, BY BATTERIES. ONE IDEA GAVE HER A MAGNETIC HARPOON SHE SHOOTS OUT OF HER HAND TO ATTACH TO A CAR, POWERING UP BY WATER-SKIING BEHIND IT.

KEVIN NELSON,
VISUAL DEVELOPMENT ARTIST

KEVIN NELSON / DIGITAL



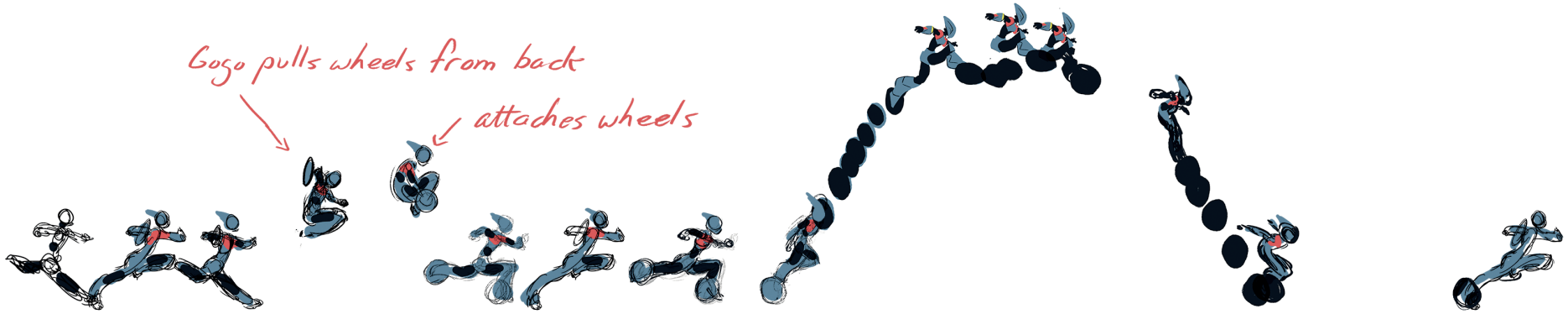
KEVIN NELSON / DIGITAL



KEVIN NELSON / DIGITAL

JAMES FINCH / DIGITAL

How Gogo's Wheels allow her to jump large distances : Photoshop file animates.

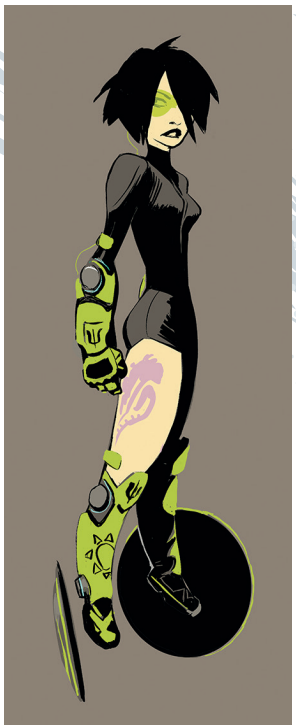


KEVIN NELSON / DIGITAL

LORELAY BOVE / DIGITAL

KEVIN NELSON / DIGITAL

SHIYOON KIM / DIGITAL



KEVIN NELSON / DIGITAL

SHIYOON KIM / DIGITAL

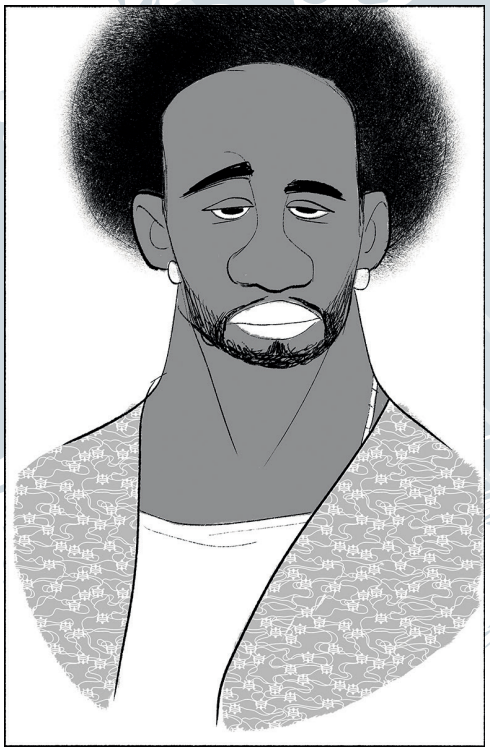
SHIYOON KIM / DIGITAL

FOR GO GO'S SUPERSUIT I WANTED YELLOW, BECAUSE HER LAST NAME IS TAMAGO, WHICH MEANS "EGG" IN JAPANESE. YELLOW AND BLACK ALSO MADE SENSE FOR TRAFFIC.

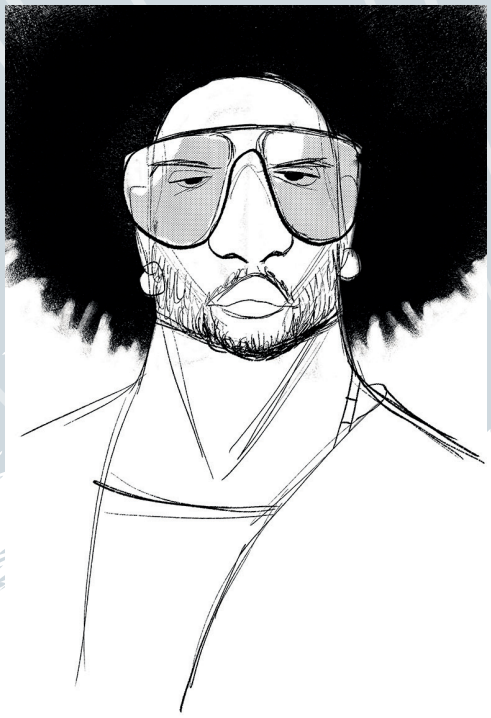
LORELAY BOVE, *VISUAL DEVELOPMENT ARTIST*

WASABI

LORELAY BOVE / DIGITAL



SHIYOON KIM / DIGITAL



SHIYOON KIM / DIGITAL

JIN KIM / DIGITAL

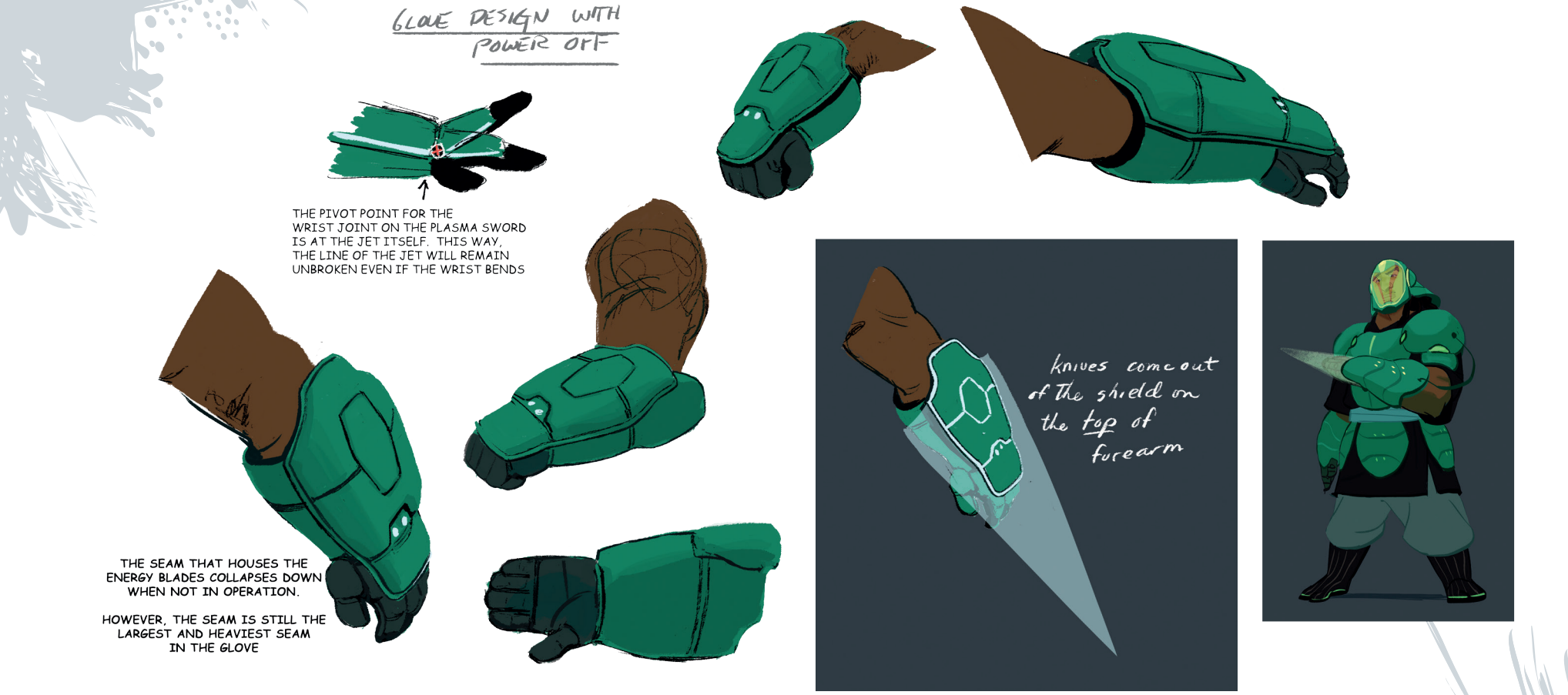
IT'S FUN TO TAKE THE BIGGEST, STRONGEST-LOOKING MEMBER OF THE TEAM AND MAKE HIM A RISK-AVERSE NEATNIK.

DAN GERSON, ***WRITER***

SHIYOON KIM / DIGITAL

DON HALL / DIGITAL

JIN KIM / DIGITAL



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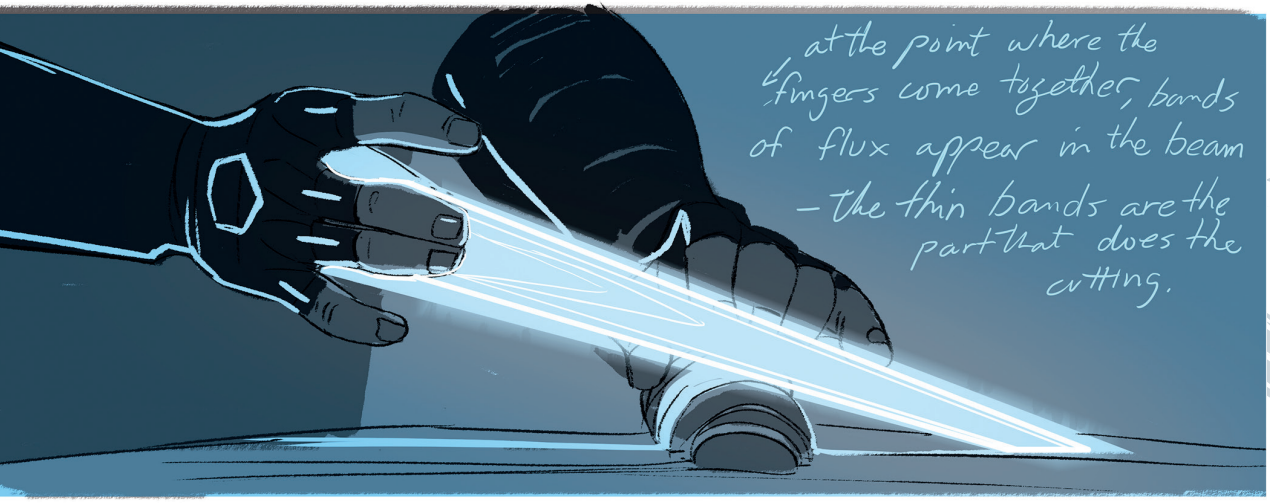
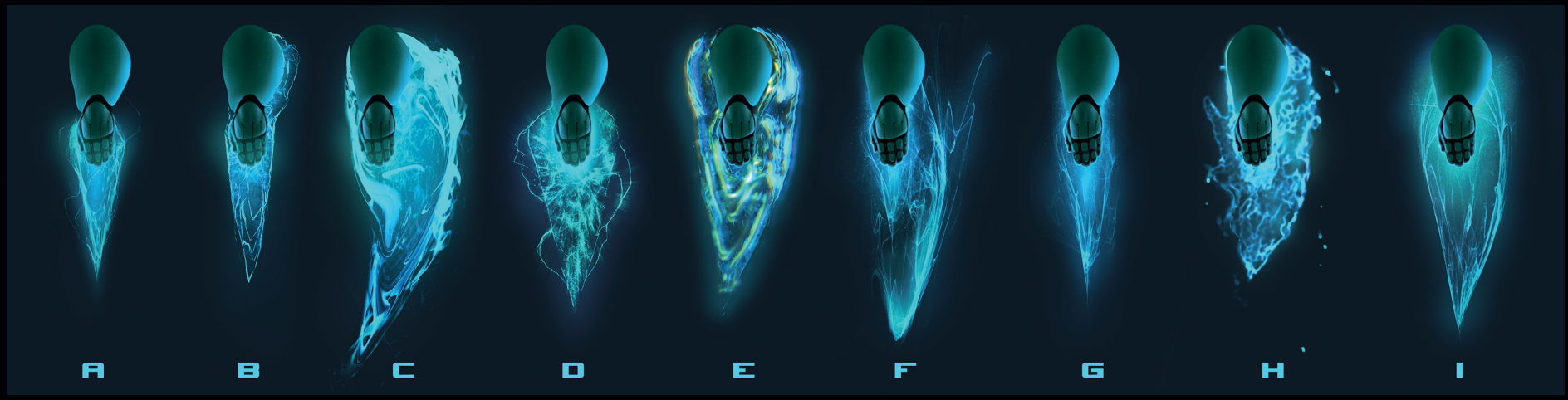


KEVIN NELSON / DIGITAL

IN THE *BIG HERO 6* COMICS, WASABI IS A MUTANT WHO CAN PROJECT ENERGIES. TO HELP GROUND HIM IN OUR WORLD, I PITCHED THE IDEA THAT HIS BLADES WERE MADE OF SUPERHEATED PLASMA TRAVELING ALONG A MONOFILAMENT STRUCTURE. THERE IS A FINE LINE BETWEEN SCIENCE FICTION AND SCIENCE FACT.

HANK DRISKILL, *TECH SUPERVISOR*



RYAN LANG / DIGITAL

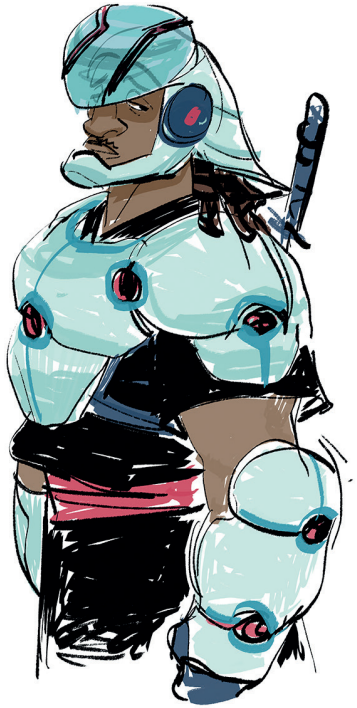
JOE MATEO, BRIAN KESINGER / DIGITAL

DON HALL / DIGITAL

LORELAY BOVE / DIGITAL

SHIYOON KIM / DIGITAL

SHIYOON KIM / DIGITAL



SHIYOON KIM / DIGITAL

SHIYOON KIM / DIGITAL

KEVIN NELSON / DIGITAL

WASABI'S SUPERSUIT WAS TRICKY. I TRIED ONE WITH A MODERN COAT THAT WAS FIREPROOF, SO HE WOULDN'T BE INJURED BY HIS OWN BLADES. WE DECIDED TO PUT HIM IN GREEN TO PLAY UP HIS NAME.

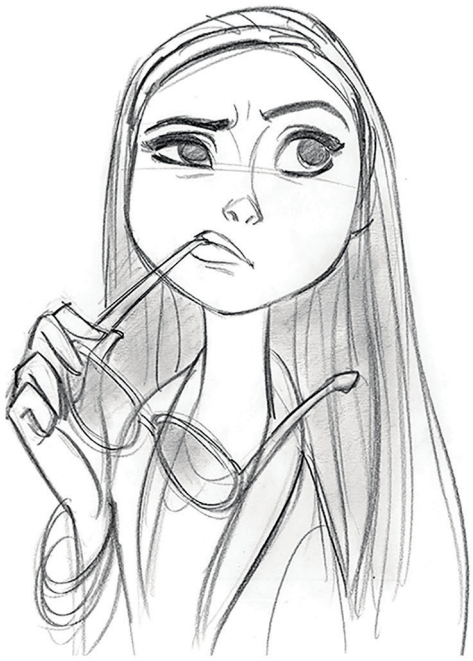
LORELAY BOVE, *VISUAL DEVELOPMENT ARTIST*

HONEY LEMON

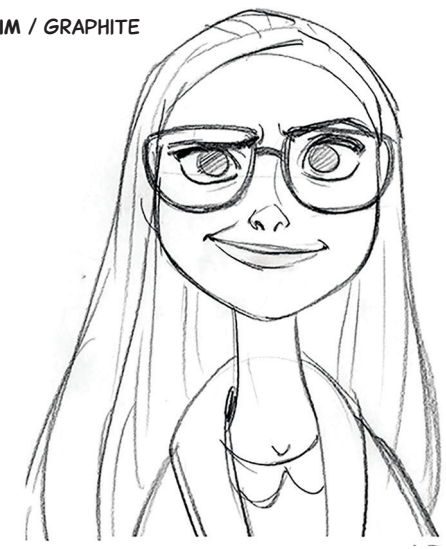
SHIYOON KIM / DIGITAL

HONEY LEMON IS AN ETERNAL OPTIMIST. EVEN WHEN THE TEAM IS BEING ATTACKED BY AN EVIL MASTERMIND OR IN A CAR CHASE AND IT LOOKS LIKE THEY MIGHT DIE, SHE CAN FIND THE POSITIVE SPIN ON ANYTHING.

ROBERT BAIRD, *WRITER*

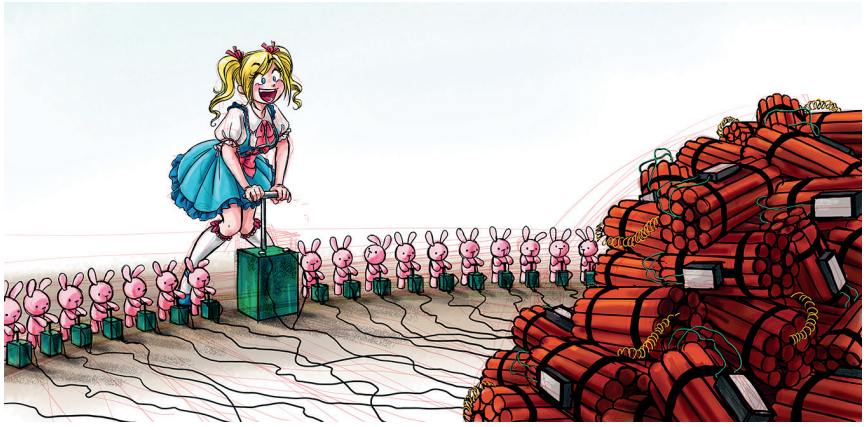


JIN KIM / GRAPHITE



SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL



HYUN MIN LEE / DIGITAL

HONEY LEMON WAS A TOUGH ONE TO CRACK. WE WANTED HER TO BE VERY SMART AND TO GROUND HER POWER PURSE IN SCIENCE. IT'S A FUN CONTRAST—A CHARACTER WHO IS SWEET AND INNOCENT ON THE OUTSIDE, BUT INSIDE HAS A DARKNESS; SHE LIKES TO DESTROY THINGS.

DON HALL, *DIRECTOR*

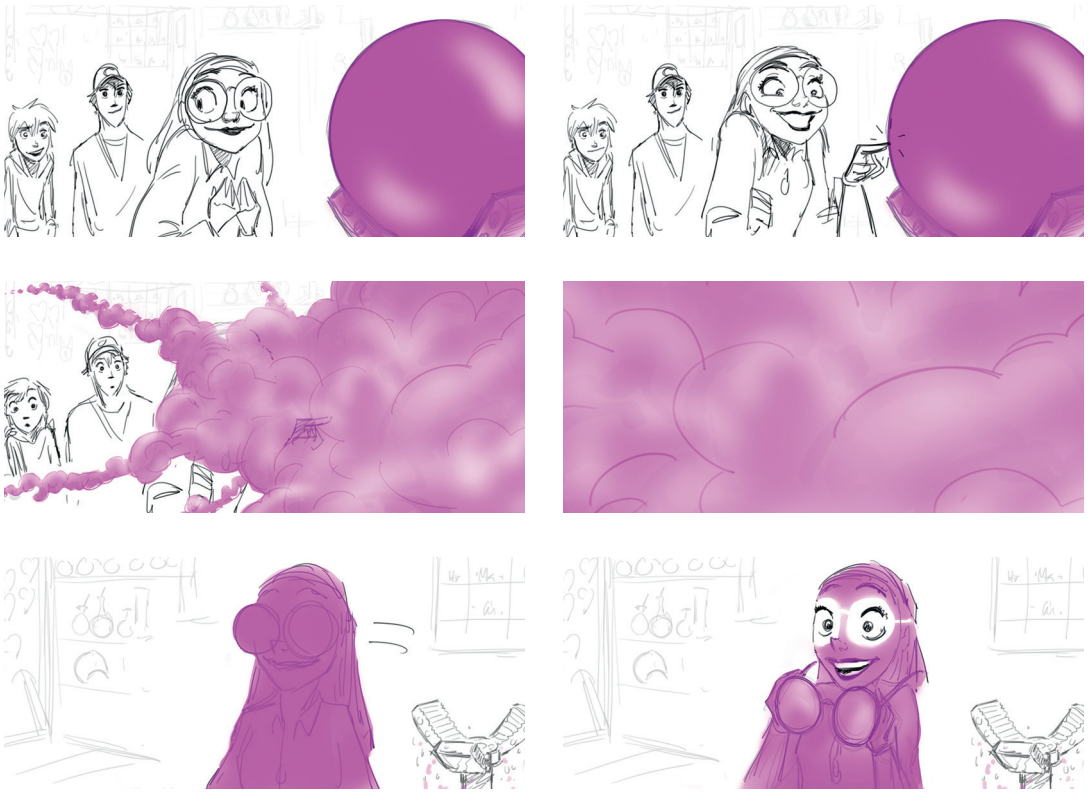
LORELAY BOVE / DIGITAL

SHIYOON KIM / DIGITAL

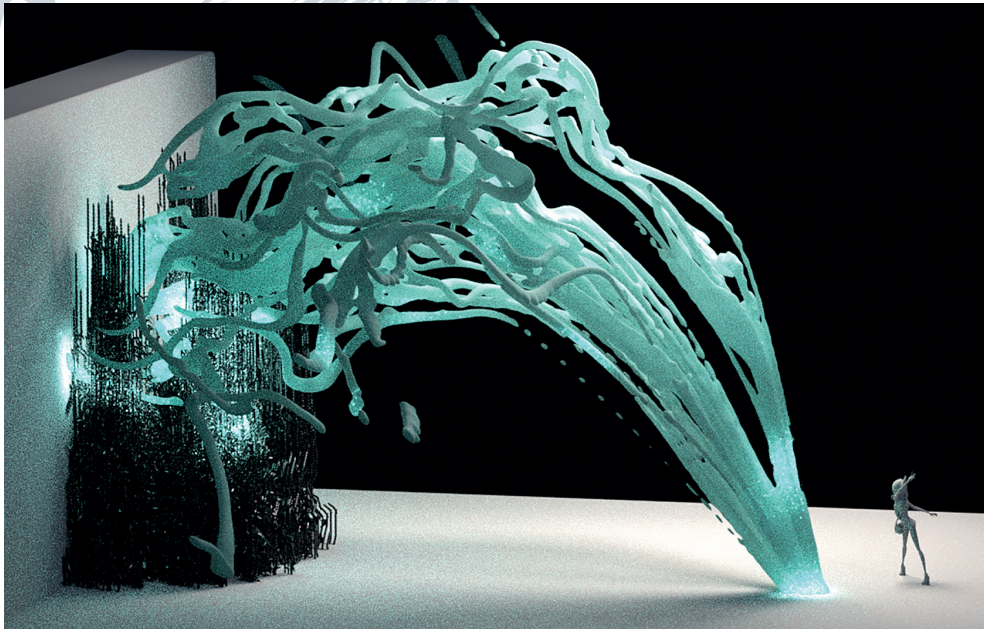
LORELAY BOVE / DIGITAL

WE CAME UP WITH ALL THESE POSSIBLE CHEMICAL REACTIONS HONEY LEMON COULD GENERATE. FANTASTIC, COLORFUL, REALLY EXCITING AND EVEN UPLIFTING EXPLOSIONS OF COLOR, ON A VERY LARGE SCALE, AND WITH DIFFERENT REACTIONS—FOAMY, FLASHY, CLOUDY, EXPLOSIVE-Y, SMOKY.

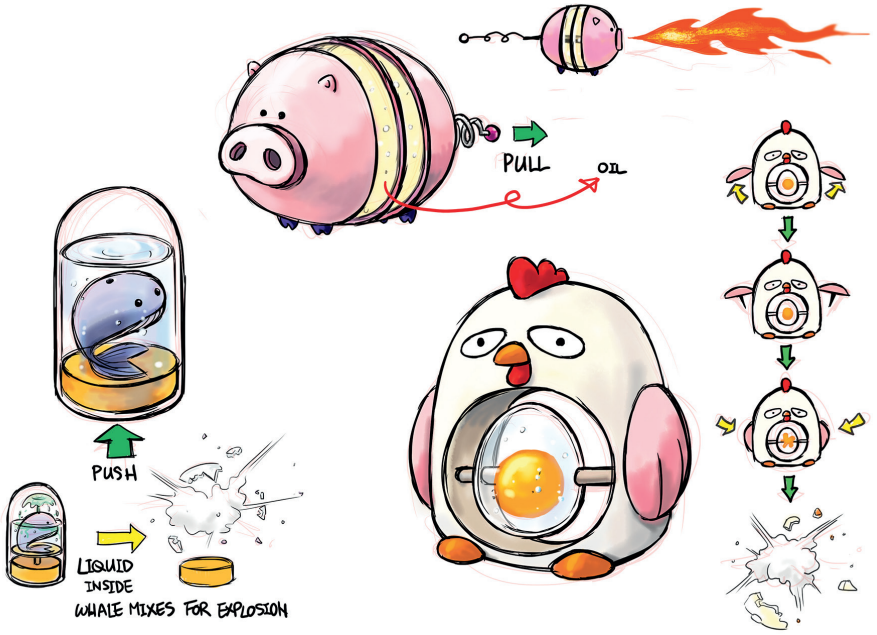
PETER DE MUND, *FX DESIGNER*



MARC SMITH / DIGITAL

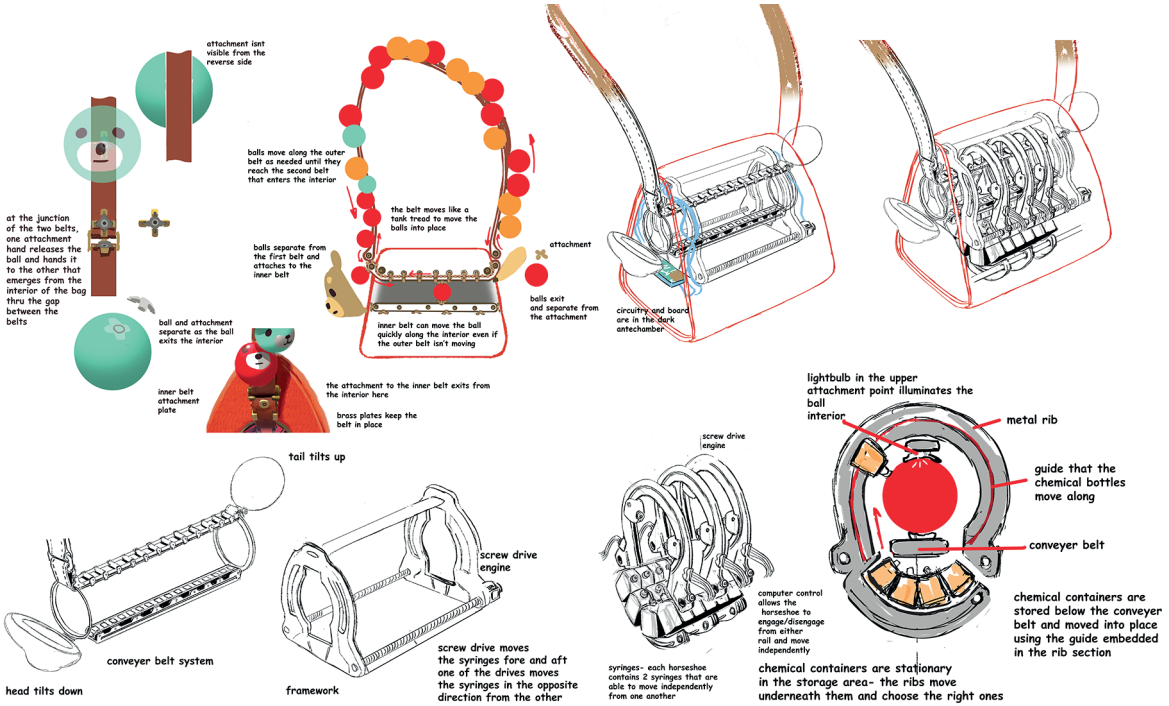


HENDRIK PANZ / DIGITAL



HYUN MIN LEE / DIGITAL

KEVIN NELSON / DIGITAL



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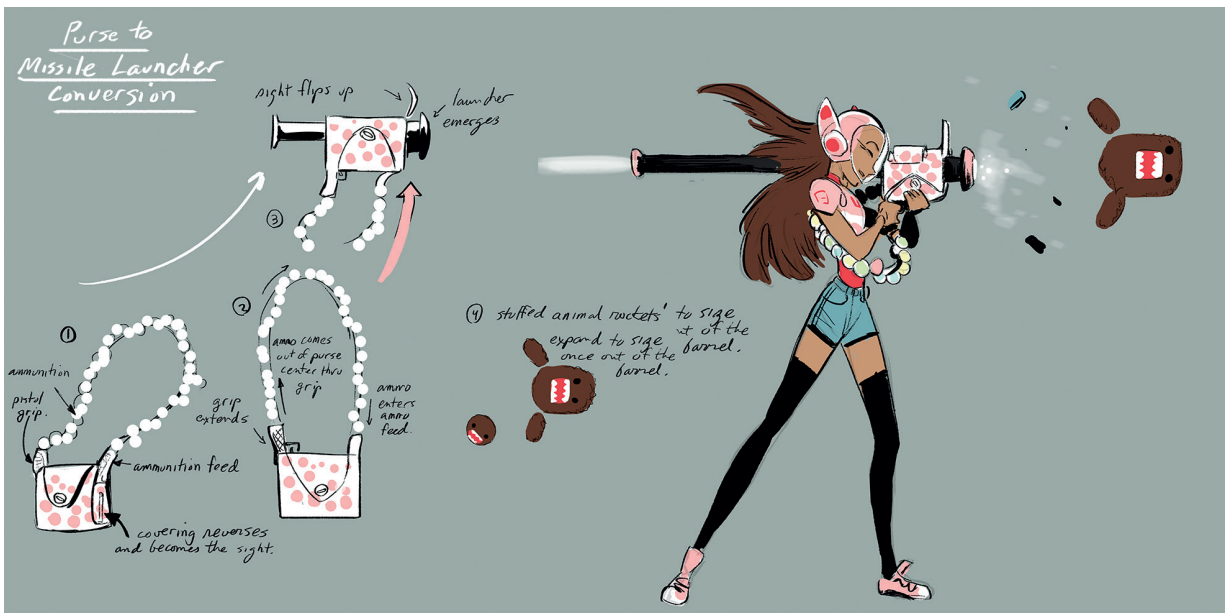

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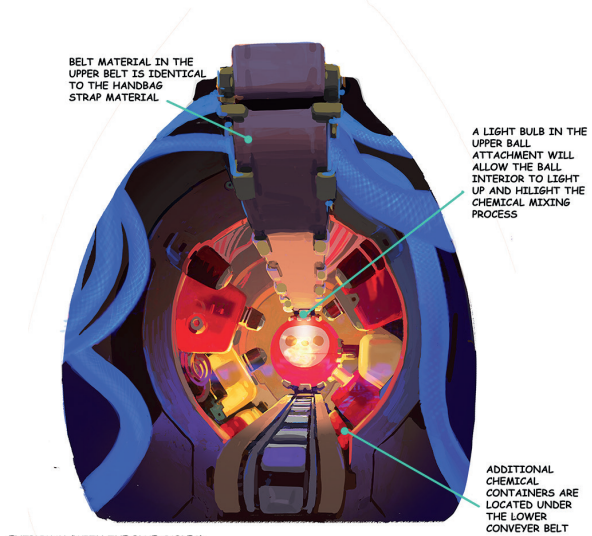
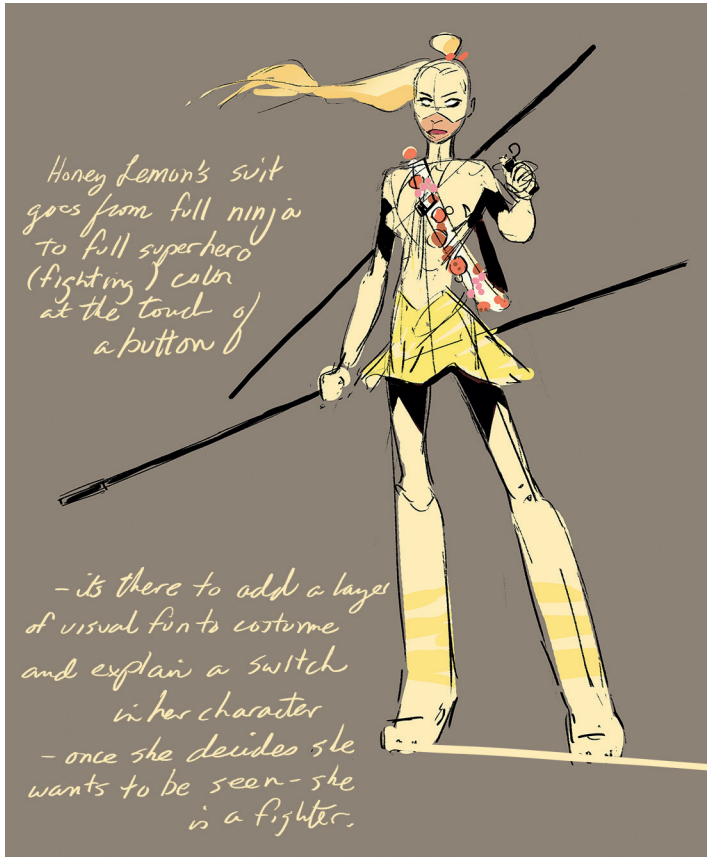


KEVIN NELSON / DIGITAL

LORELAY BOVE / DIGITAL

LORELAY BOVE / DIGITAL

SHIYOON KIM / DIGITAL



KEVIN NELSON / DIGITAL

SHIYOON KIM / DIGITAL

SHIYOON KIM / DIGITAL

LORELAY BOVE / DIGITAL

HONEY LEMON WAS FIRST CONCEIVED AS A COLORFUL, OUTGOING FASHIONISTA. BUT TO EMPHASIZE THE IDEA THAT SHE REALLY COMES INTO HER OWN AS A SUPER HERO, WE TONED DOWN HER REGULAR CLOTHES A BIT SO HER BRIGHT ORANGE SUPERSUIT IS A BIG CONTRAST.

PAUL FELIX, *PRODUCTION DESIGNER*

FRED

SHIYOON KIM / DIGITAL

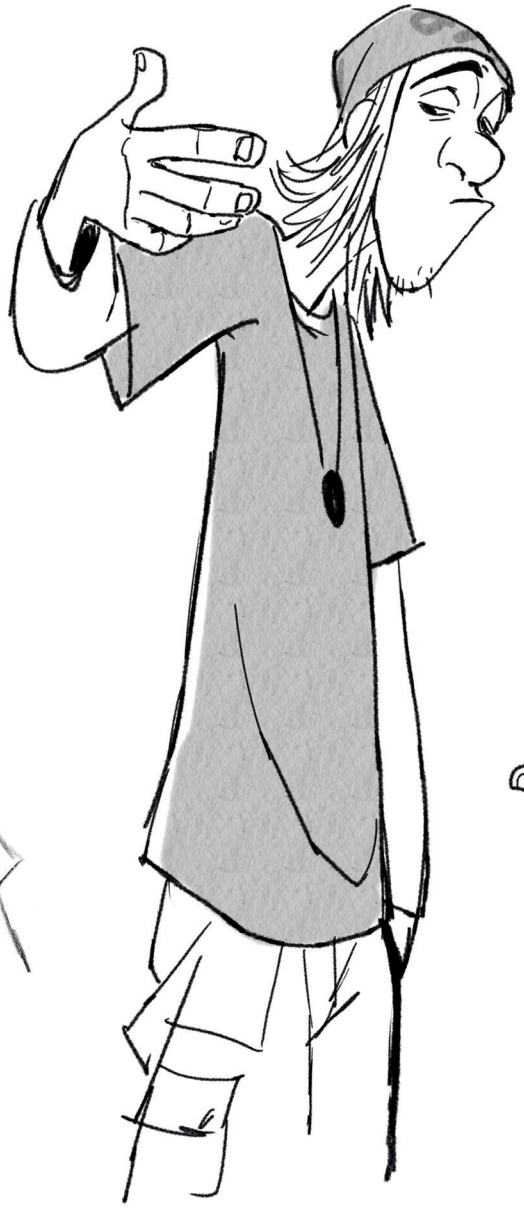
I LOVE CHARACTERS LIKE FRED, WHO PLAY AGAINST TYPE. HE'S THE DIRTIEST, GRUNGIEST, SLACKER-EST MEMBER OF THE TEAM BUT HE LIVES IN A GIANT MANSION AND COMES FROM INCREDIBLE WEALTH.

DAN GERSON, *WRITER*

SHIYOON KIM / DIGITAL

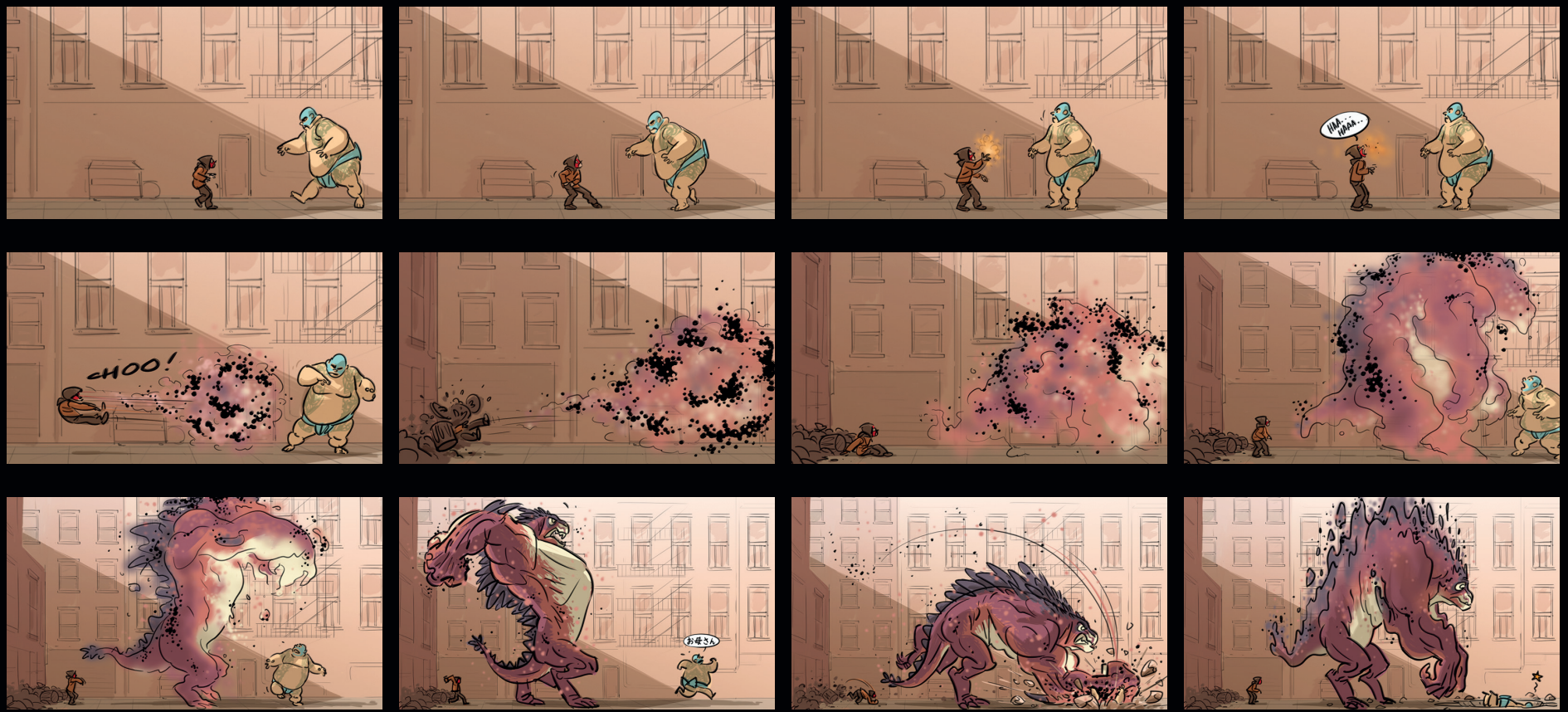
CHRIS MITCHELL / DIGITAL

JIN KIM / GRAPHITE



JIN KIM / DIGITAL

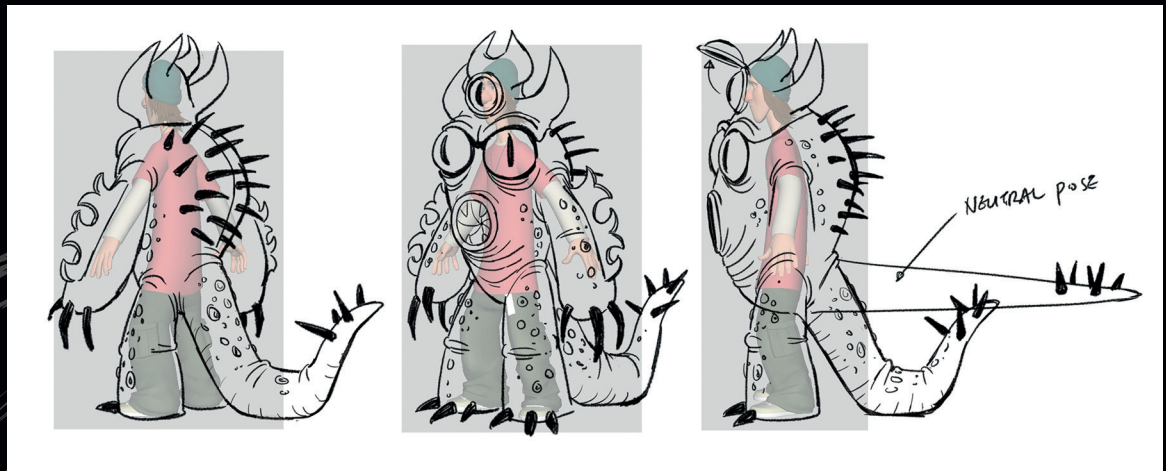
JIN KIM / DIGITAL



JOE MATEO / DIGITAL

WE TRIED DIFFERENT VERSIONS OF FRED'S SUPERPOWER, LIKE NANOTECHNOLOGY. WE EVEN TOOK A RESEARCH TRIP TO UCLA'S NANOTECHNOLOGY LABS TO SEE HOW HE COULD USE IT. WE ULTIMATELY DECIDED HE WOULD HAVE A SUPER-JUMP AND COULD "BREATHE" FIRE.

JOE MATEO, *HEAD OF STORY*



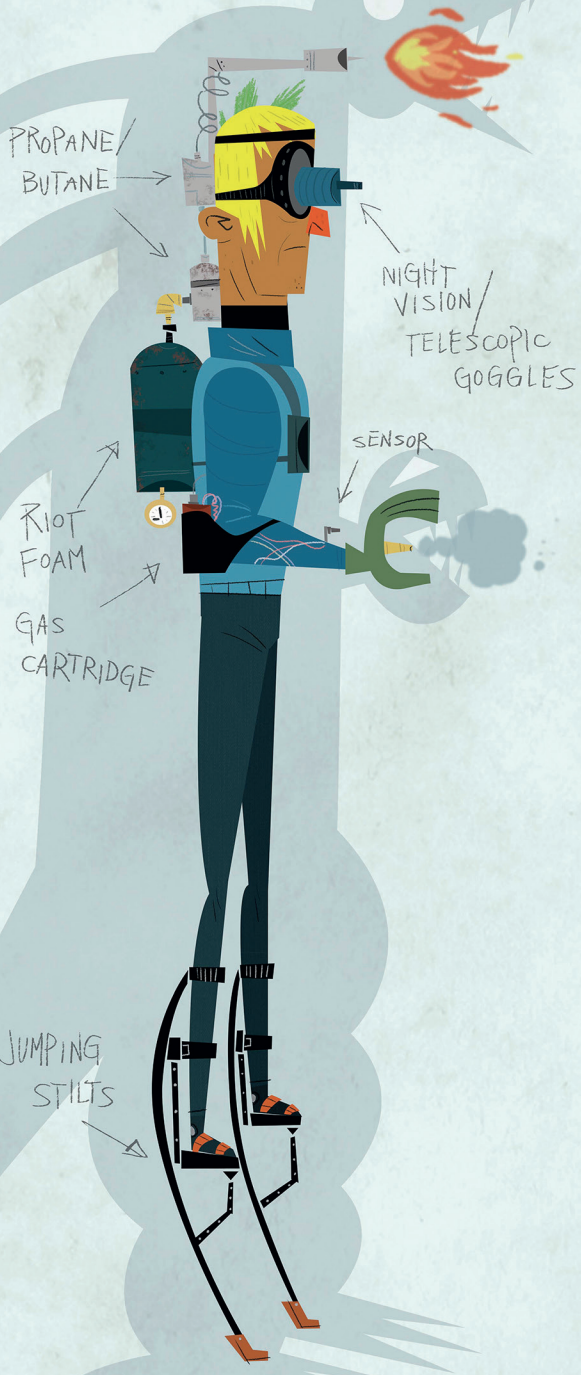
JIN KIM, DYLAN EKREN / DIGITAL

FRED'S SUPERPOWER SEEMS SIMPLE BUT FIRE LOOKS VASTLY DIFFERENT DEPENDING ON ITS TEMPERATURE, ITS SCALE, WHAT KIND OF MATERIAL IS ACTUALLY BURNING. WE PLAYED WITH ITS COLOR SO IT COULD TRANSITION FROM RED TO BLUE TO ORANGE.

MICHAEL KASCHALK, *HEAD OF FX ANIMATION*

RYAN LANG / DIGITAL

FRED INNER KAIJU SUIT



CHRIS MITCHELL / DIGITAL

LORELAY BOVE / DIGITAL

FRED'S SUPERSUIT ELUDED US UNTIL WE FOUND A GROUP CALLED KAIJU BIG BATTEL. THEY PERFORM MOCK WRESTLING MATCHES IN A RING WITH TINY BUILDINGS WHILE DRESSED IN HOMEMADE RUBBER MONSTER SUITS. THE KIND OF PERSON WHO WOULD PUT ON A RUBBER SUIT AND WRESTLE FELT LIKE OUR GUY.

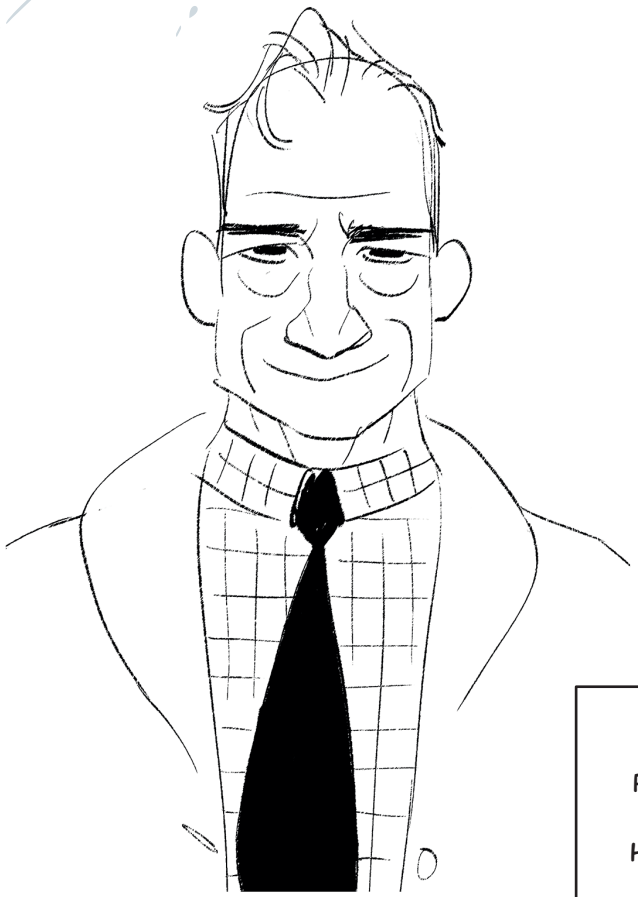
DON HALL, *DIRECTOR*

SHIYOON KIM / DIGITAL

CHRIS MITCHEL / DIGITAL

CHRIS URE, JOE MATEO, LISSA TREIMAN, DEAN WELLINS, NORMAND LEMAY, MARC SMITH, LEO MATSUDA / DIGITAL

CALLAGHAN



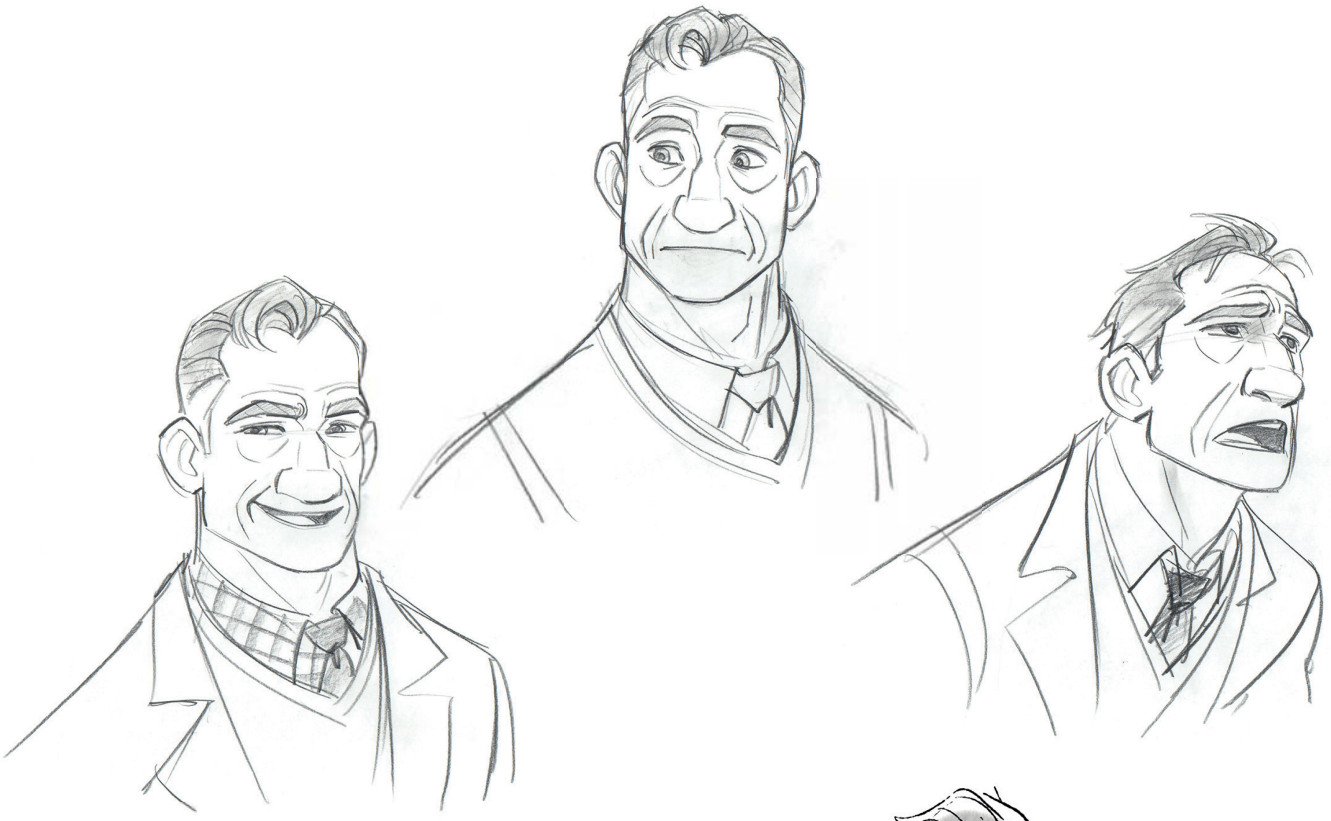
SHIYOON KIM / DIGITAL

JIN KIM / DIGITAL

CALLAGHAN IS OLDER AND LOOKS LIKE A PROFESSOR, BUT HE'S STURDY AND HAS A MILITARY BACKGROUND, SO YOU BELIEVE HE KNOWS HOW TO DO PHYSICAL STUNTS.

SHIYOON KIM, *CHARACTER DESIGNER*

JIN KIM / DIGITAL



JIN KIM / GRAPHITE

JIN KIM / DIGITAL

LORELAY BOVE / DIGITAL

YOKAI

JIN KIM / DIGITAL

SHIYOON KIM / DIGITAL

WHAT MAKES MARVEL VILLAINS INTERESTING IS THAT THEY ARE RIGHTEOUS. THEY THINK THEY ARE DOING THE RIGHT THING, OR AT LEAST THE NECESSARY THING, WHICH MAKES THEM MORE HUMAN AND RELATABLE. YOKAI IS NOT A VILLAIN IN HIS OWN MIND.

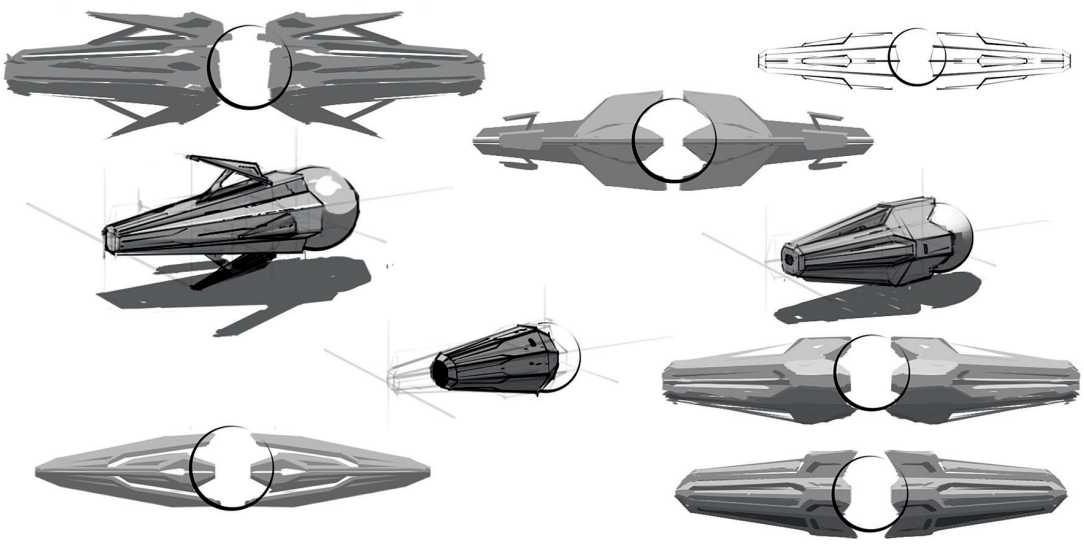
HANK DRISKILL, *TECH SUPERVISOR*

JIN KIM / DIGITAL

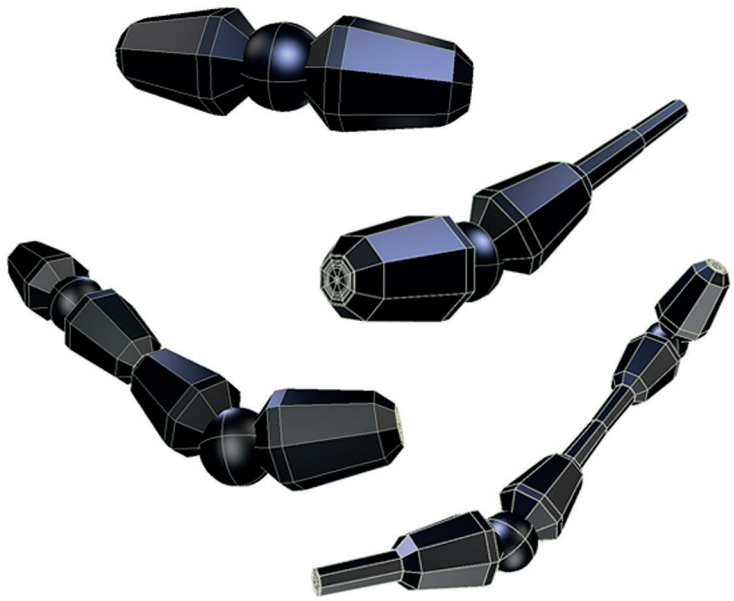
JIN KIM / DIGITAL

JIN KIM / DIGITAL

RYAN LANG / DIGITAL



MICHAEL KASCHALK / DIGITAL

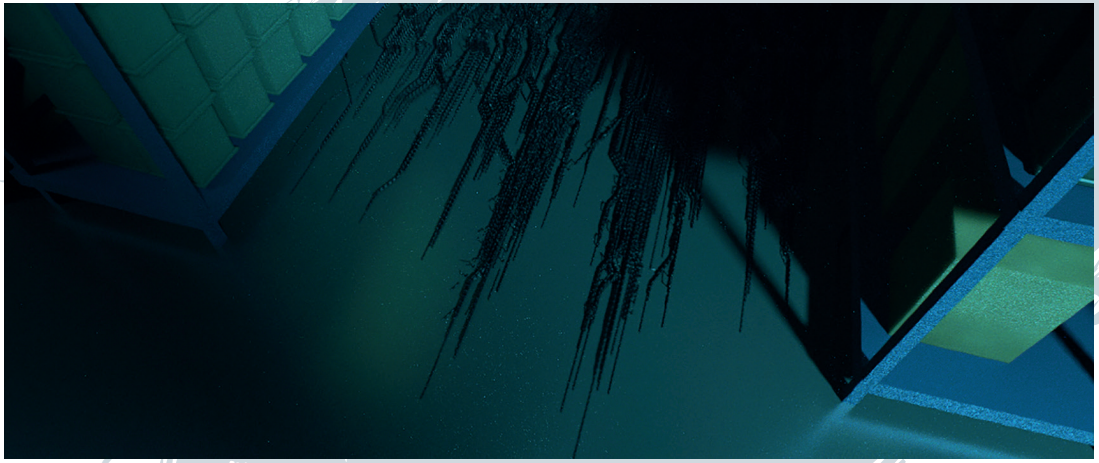


RYAN LANG / DIGITAL

THE MICROBOTS BUILD SIMPLE FORMS THAT CAN ACTUALLY ACCOMPLISH A TASK. THE SHAPES THEY CREATE AS THEY'RE FORMING LOOK LIKE CIRCUIT-BOARD PATTERNS. THEY'RE MECHANICAL, ELECTRONIC, AND HIGH-TECH, AS OPPOSED TO MAGICAL, ORGANIC THINGS.
MICHAEL KASCHALK, *HEAD OF FX ANIMATION*

STORYBOARDS / JOHN RIPA / DIGITAL

SHIYOON KIM / DIGITAL



THE MICROBOTS ARE LITTLE TINY ROBOTS. THEY DON'T JUST FLY THROUGH THE AIR, THEY NEED TO FORM STRUCTURES TOGETHER TO MOVE. FOR INSPIRATION, WE LOOKED AT VIDEOS OF HOW FIRE ANTS BUILD SHAPES BY PILING ON TOP OF EACH OTHER AS THEY GO, AND SUPPORT THEMSELVES IN THE STRUCTURE THEY ARE BUILDING.

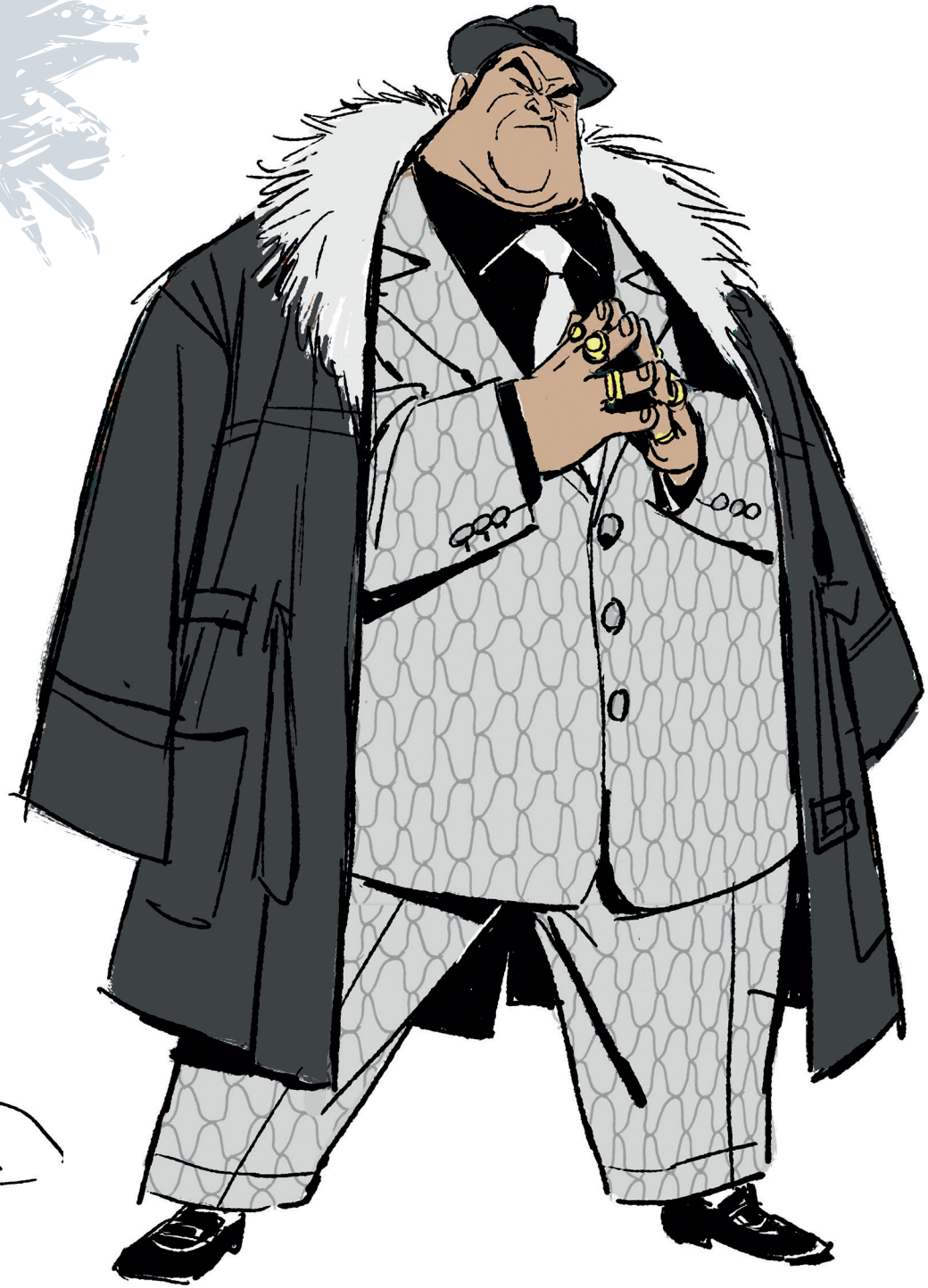
HANK DRISKILL, *TECH SUPERVISOR*

YAMA

YAMA REPRESENTS THE DARK PATH HIRO COULD GO DOWN. HE'S A LEADER OF THE BAD GUYS. "YAMA" MEANS MOUNTAIN, AND THAT'S WHAT HE IS—AN INTIMIDATING FORCE, A MOUNTAIN OF A MAN.

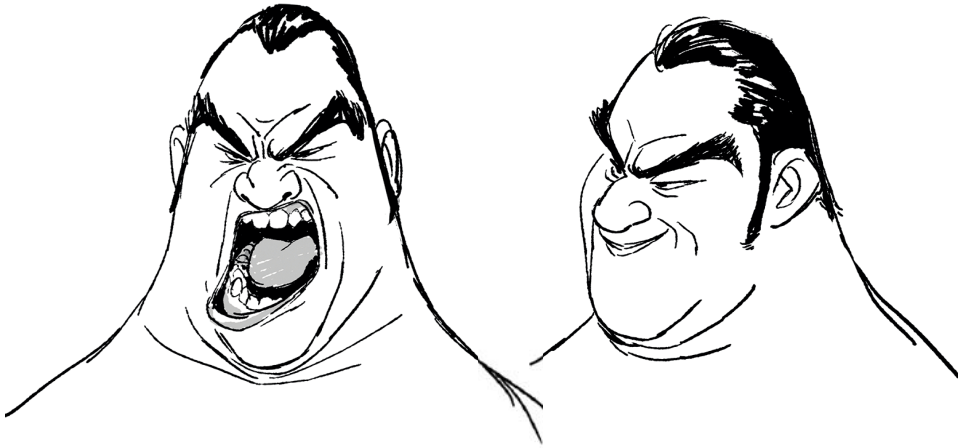
PAUL BRIGGS, *HEAD OF STORY*

JIN KIM / DIGITAL



JIN KIM / DIGITAL

SHIYOON KIM / DIGITAL



JIN KIM / DIGITAL

RYAN LANG / DIGITAL

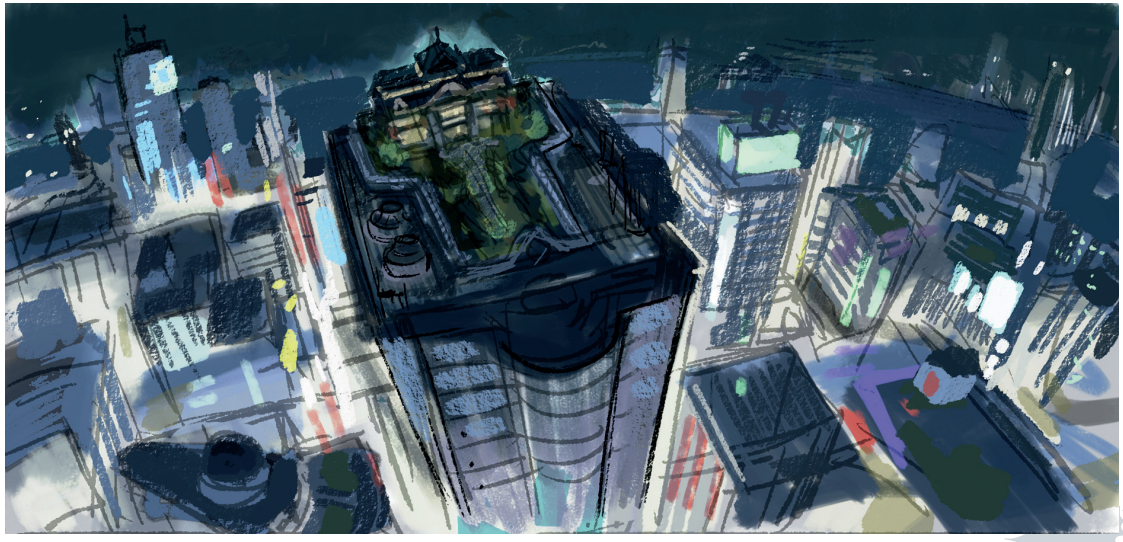
JIN KIM / DIGITAL

YAMA'S COSTUMES HAVE ICONIC JAPANESE PATTERNS YOU WOULD FIND ON FABRIC, ON KIMONOS, IN EMBROIDERY, ON HANDKERCHIEFS.

LORELAY BOVE, *VISUAL DEVELOPMENT ARTIST*

SCOTT WATANABE / DIGITAL

SCOTT WATANABE / DIGITAL



SCOTT WATANABE / DIGITAL

SCOTT WATANABE / DIGITAL

VANISHED VILLAINS: FUJITAS

JIN KIM / DIGITAL

I THOUGHT OF THE FUJITAS LIKE THE GANGS IN MY HIGH SCHOOL. THE GIRLS WOULD CHEW ON RAZOR BLADES! THERE WAS A FEELING OF SNAKES OR KOI FISH IN THEIR MOVEMENTS, CUTTING THROUGH THE AIR LIKE A BLADE.

SHIYOON KIM, *CHARACTER DESIGNER*

SCOTT WATANABE / DIGITAL

HELEN CHEN / DIGITAL

KEVIN DART / DIGITAL

MR. SPARKLES

SCOTT WATANABE / DIGITAL

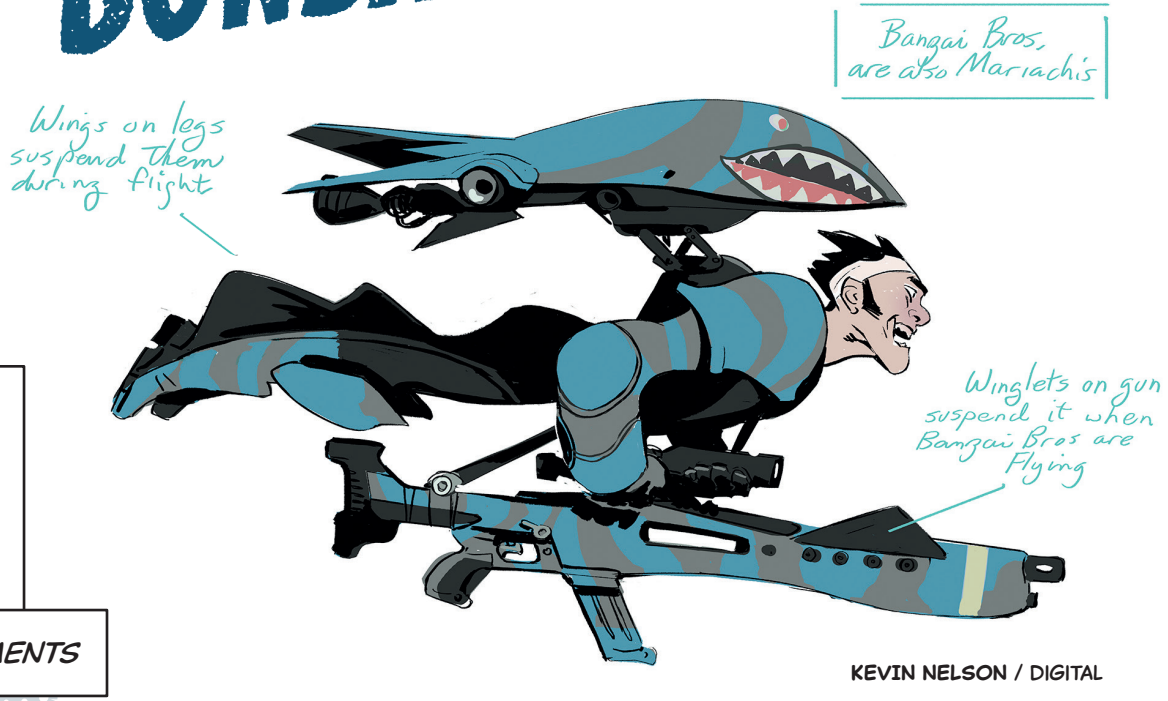
EARLY ON, WE WANTED YOKAI TO BE REDEEMABLE, SO WE NEEDED ANOTHER VILLAIN. WE CAME UP WITH MR. SPARKLES, A JAPANESE TV TALK SHOW HOST WHO WANTED TO CONTROL THE WORLD. HE WAS A DUMPY, LITTLE, KID-LIKE MAN WHO WAS SUPER CREEPY AND WEIRD.

SCOTT WATANABE, *ART DIRECTOR, ENVIRONMENTS*

KEVIN DART / DIGITAL

KEVIN DART / DIGITAL

BONSAI BOMBERS

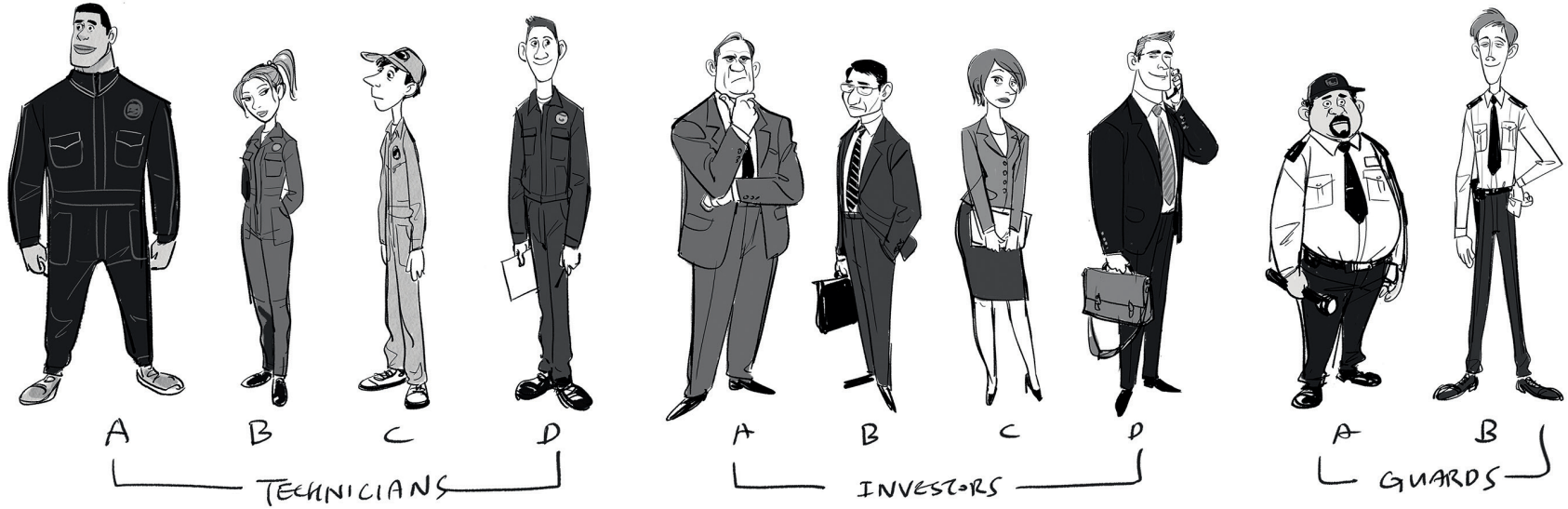


KEVIN NELSON / DIGITAL

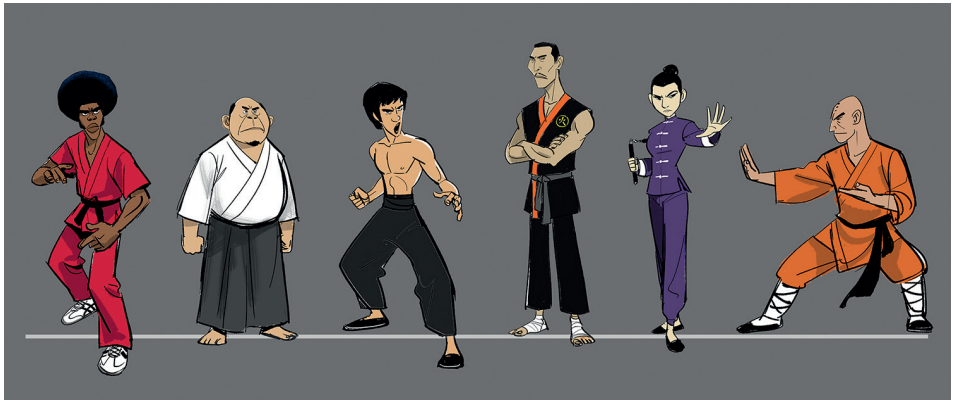
BACKGROUND CHARACTERS

TO BRING A POPULATED CITY TO LIFE, WE INVENTED A TECHNOLOGY CALLED THE DENIZEN FACTORY TO ALLOW US TO BUILD A WHOLE SERIES OF CROWD CHARACTERS THAT EACH HAVE A DISTINCT DESIGN. THE VISUAL DEVELOPMENT AND CHARACTER TEAMS DEVELOPED A RANGE OF BODY AND HEAD TYPES, FACIAL STYLES, HAIRDOS, COSTUMING. THEN WE USE DENIZEN TO COMBINE THEM INTO UNIQUE CHARACTER DESIGNS.

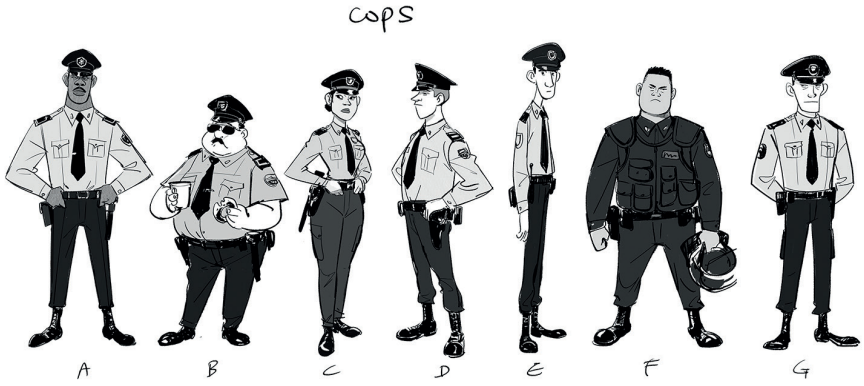
KYLE ODERMATT, *VFX SUPERVISOR*



JIN KIM / DIGITAL



JIN KIM / DIGITAL



JIN KIM / DIGITAL

CINEMATOGRAPHY

From the outset, the filmmakers wanted to bring some attributes of live-action films to *Big Hero 6*. For Hall, that meant, "More naturalistic cinematography. We stylized the characters and the world, but we pushed for a realistic approach to the lighting and camera work." The director of cinematography, lighting, Adolph Lusinsky, pitched a more cinematic look than anything Disney had done before. Executive producer John Lasseter embraced the idea. Co-producer Kristina Reed says, "We spent a lot of time talking about the look we wanted, the way the camera would feel, how it would move."

Production designer Paul Felix was especially intrigued by the challenge of merging animation with live-action. "The big statement of this film is to blend ideas that would seem to be at odds with each other. Getting the cinematography to reflect a live-action film, and also photographing caricatured shapes felt like a really cool thing to pull off. It's what I'm most passionate about."

But how do you get an animated feature to feel like it was shot through a real camera? Lusinsky explains, "We used several techniques and technologies, including lens distortion, exposure, film response. And optical effects, like lens flares, light contaminants, and bokeh, which is the effect created when the camera focuses on something close-up and everything behind it goes out of focus."

The filmmakers also brought in Oscar award–winning cinematographer Robert Richardson to consult with the look and lighting team from a live-action perspective. Says Lusinsky, "Bob's a really big fan of what we do here at Disney. And he's just a master at what he does. It was great to get his thoughts on how he would approach a shot on a live-action set. He brings wisdom from all his experience and it helped us."

BIG HERO 6 IS A MASH-UP BETWEEN OUR TYPICAL FEATURE ANIMATED PROJECTS, WHICH ARE SO SPECIAL, AND MARVEL'S SUPER HERO COMIC-BOOK MOVIES, WHICH ARE SO COOL. TO DO SOMETHING THAT HAS THE BEST OF BOTH OF THOSE THINGS WAS THE APPEAL AND THE CHALLENGE.

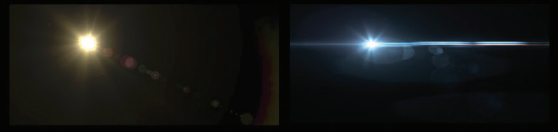
KYLE ODERMATT, *VFX SUPERVISOR*

Camera and Lens Effects

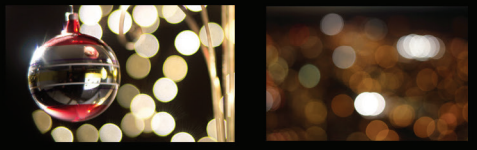
Lens Distortion

Exposure and Film Response

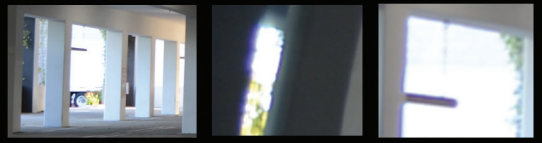
Lens Flares and Blooms



Bokeh



Chromatic Aberration



HDR

ADOLPH LUSINSKY / DIGITAL
PAGES 146–147: FILM FRAME

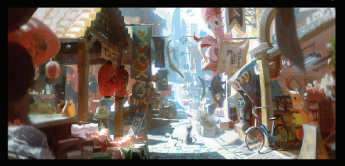
Hiro &Tadashi

-Naturalistic
-Inspired by San Francisco
  -Low fog layer juxtaposed against crisp blue skies
-default tone mapping

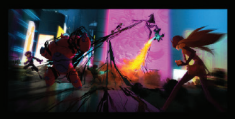
Tadashi's Death

-Somber
-Low saturation

Hiro, Baymax & BH6



-Inspired by San Francisco, Tokyo & Shanghai
-Saturated color in illuminated signs
-Use volumetric light to mass color
-More intense, pushed contrast (pushed tone mapping)
-City lights (sodium vapor, mercury vapor and LED)
  -more sodium vapor (warm) away from city center
  -more LED (cool) toward city center
  -mercury vapor (green) mixed in during action with Yokai



Yokai & microbots

-Strong silhouettes
-Yokai and microbots should mass
-Microbots, hints of strong specular
-Green mercury vapor lights for yokai

Mercury vapor lights

ADOLPH LUSINSKY / DIGITAL

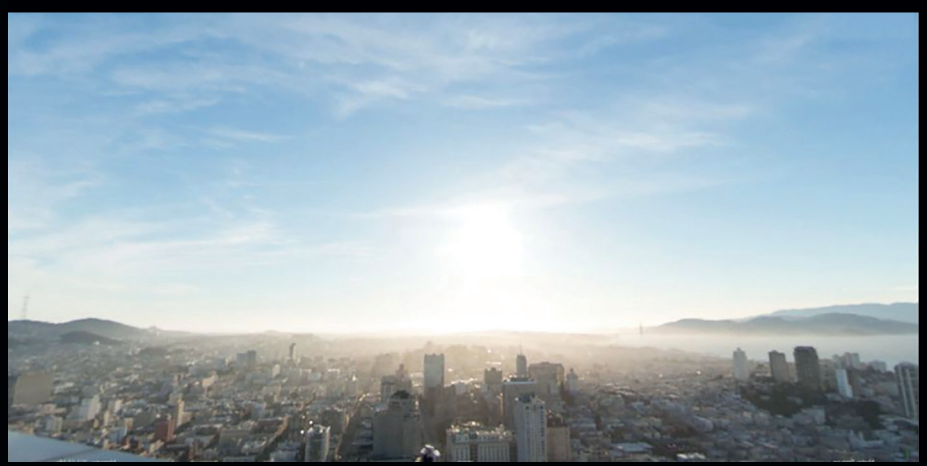
OUR CAMERA IS ALWAYS MOTIVATED BY THE STORY AND THIS CAN BE DONE IN MANY WAYS. AT THE START, OUR FILM IS ABOUT TWO BROTHERS. HIRO IS TADASHI'S YOUNGER BROTHER SO WE SHOOT FROM ABOVE HIS EYELINE TO MAKE HIM APPEAR SMALL AND INNOCENT. AFTER TADASHI'S DEATH WE BRING THE CAMERA DOWN JUST BELOW HIRO'S EYELINE. NOW THE STORY IS ABOUT HIS JOURNEY AND WE WANT TO EXPERIENCE IT MORE FROM HIS PERSPECTIVE.

ROB DRESSEL, *DIRECTOR OF CINEMATOGRAPHY, LAYOUT*

LIGHTING

MY GOAL WAS TO LIGHT A WORLD THAT FEELS REAL AND BELIEVABLE. I WANTED THE CAMERA EFFECTS TO SEEM LIKE LOOKING THROUGH A REAL LENS. THE HOPE IS TO ACHIEVE THAT, YET HAVE ALL THE SHAPES AND ANIMATION AND DESIGN WORK AT THE SAME TIME.

ADOLPH LUSINSKY,
DIRECTOR OF CINEMATOGRAPHY, LIGHTING



DAN RICE / PHOTOGRAPHS

TOKYO

TOKYO

SAN FRANCISCO

WE DID A HELICOPTER FLYOVER AT SUNSET IN SAN FRANCISCO AND TOKYO. SAN FRANCISCO'S GOT A LOT OF OLD, WARM, SODIUM LIGHTS; MOST OF TOKYO'S HAVE A COOLISH, WHITER HUE. THERE'S A WHOLE COLOR TEMPERATURE DIFFERENCE BETWEEN THOSE CITIES.

ADOLPH LUSINSKY,
DIRECTOR OF CINEMATOGRAPHY, LIGHTING

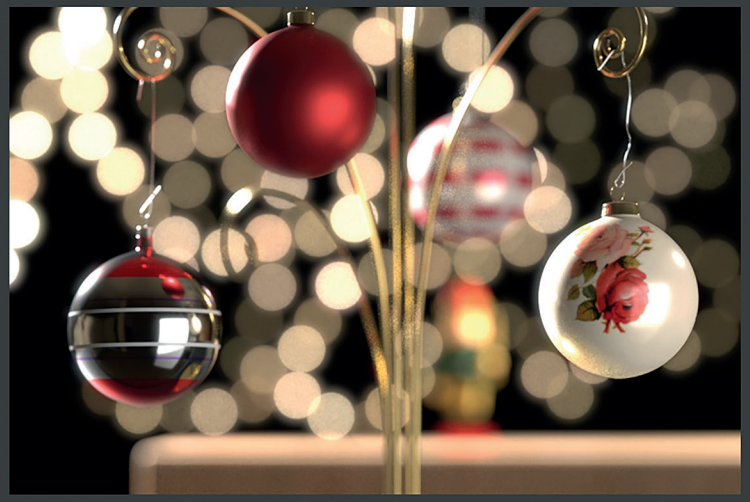
DISNEY'S HYPERION RENDERER

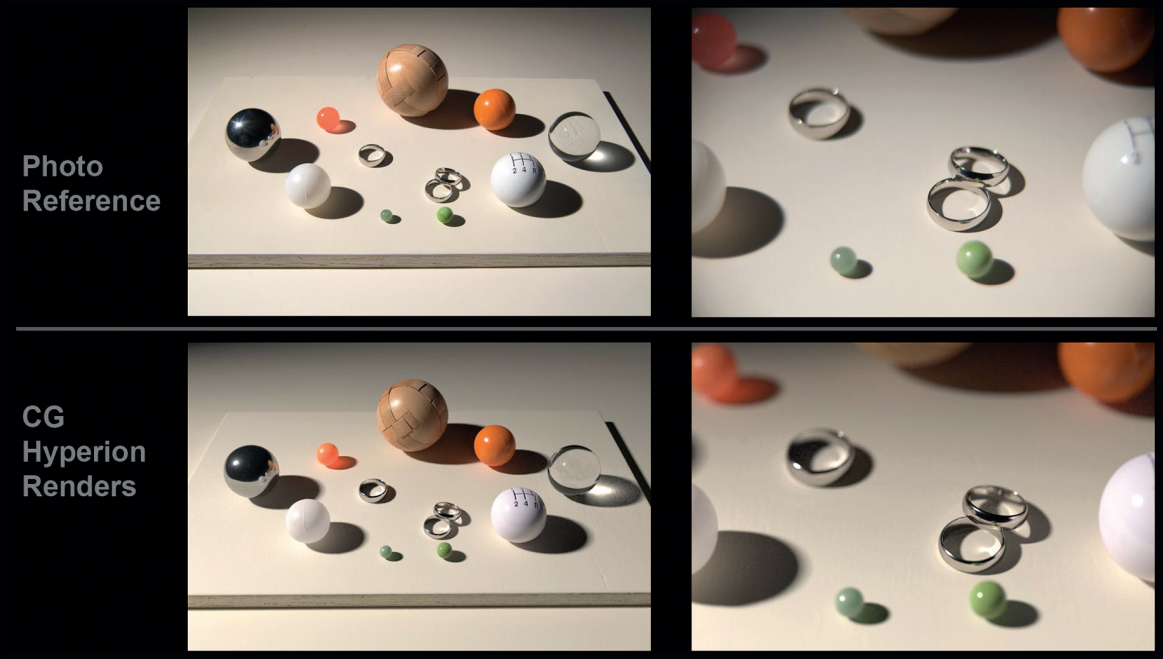
BIG HERO 6 IS THE FIRST FILM TO USE DISNEY'S HYPERION RENDERER, WHICH IS A BRAND-NEW RENDERING TECHNOLOGY. IT MAKES GLOBAL ILLUMINATION AND LIGHTING SITUATIONS MORE PLAUSIBLE. LIGHT BOUNCES OFF METAL, WOOD, CARPET, AND SKIN IN DIFFERENT WAYS, AND THE MORE ACCURATELY YOU CAN REPRESENT THAT, THE MORE REALISTIC IT STARTS TO LOOK.

HANK DRISKILL, *TECH SUPERVISOR*

Photo Reference

CG Hyperion Renders





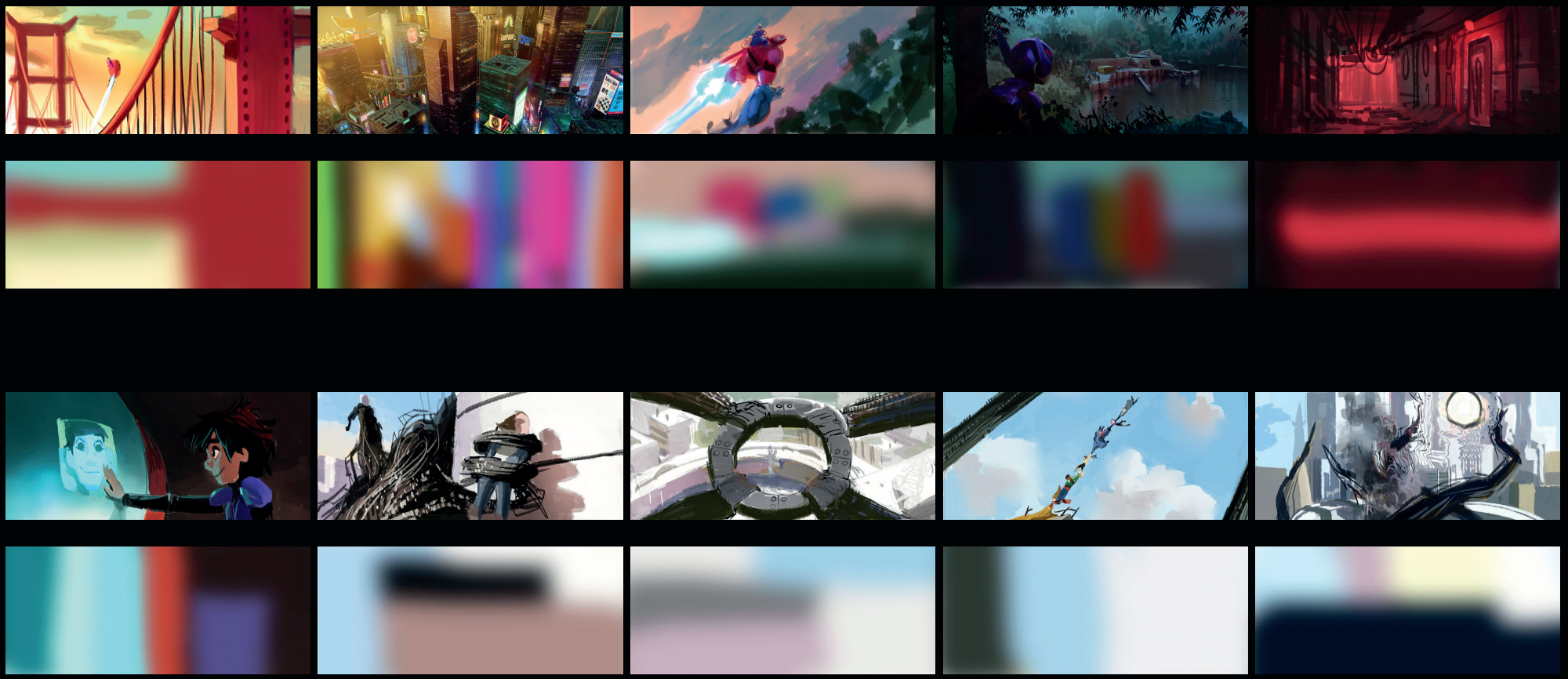
DIGITAL

HYPERION IS A GAME CHANGER. IT'S ESSENTIALLY A LIGHT SIMULATOR THAT BOUNCES LIGHT ALL AROUND A SPACE, GIVING YOU THE ABILITY TO LIGHT A ROOM WITH ONE LIGHT, AND IT WILL LOOK LIKE IT WOULD IN REAL LIFE.

KYLE ODERMATT, *VFX SUPERVISOR*

FILM FRAME

COLOR SCRIPT



PAUL FELIX / DIGITAL

THE COLOR SCRIPT MARKS THE STRUGGLE BETWEEN HEROES AND VILLAIN. THE CITY, THE SUPER SUITS, AND THE OVERALL PALETTE HAS A FULLER RANGE WHEN THE FOCUS IS ON OUR PROTAGONISTS, WHO ARE IDEALISTIC AND ADAPTABLE. WHEN YOKAI HOLDS SWAY, THE COLORS AND TONES ARE MORE RESTRICTED, REFLECTING HIS NARROWNESS OF VISION.

PAUL FELIX, *PRODUCTION DESIGNER*

ACKNOWLEDGMENTS

I was honored and excited when Kristina Reed and Don Hall asked me to write *The Art of Big Hero 6*. Thank you both for the opportunity to tell the visual story of this film.

I am sincerely indebted to the individual artists who took time from their extremely hectic schedules to sit and talk with me for this book. I learned so much from each of you, and I hope I've done justice to your deeply thoughtful creative process and amazing talents. Many thanks to Andy Sinur, Lauren Brown, and the entire *BH6* production management and executive support teams, who keep it all running with humor and grace.

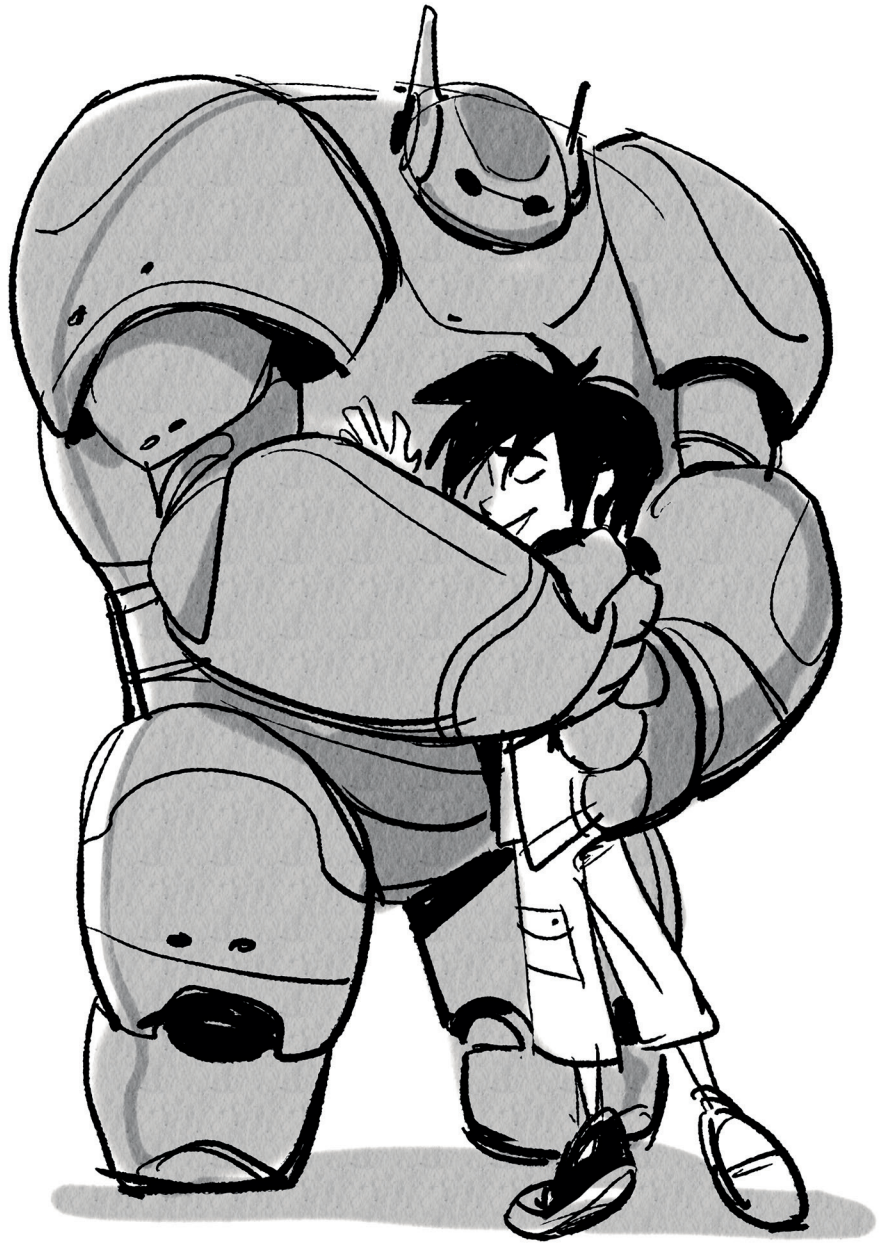
To Renato Lattanzi and everyone at Chronicle Books, thank you for your unerring belief in me and your generous words of advice. Special thanks to my editor, Beth Weber, who guided me through the publishing process with patience, kindness, and intelligence. And to Ashley Read and Elise Scanlan, my conscientious transcriptionists, you did me proud!

Thank you from the bottom of my heart to three women without whom I'd be lost: Maggie Malone, I am forever grateful for your encouragement and support; Jennifer Lee, you inspire me every day with your passion and integrity; and my mother, Ginger Diethart, your strength and honesty taught me who I wanted to be.

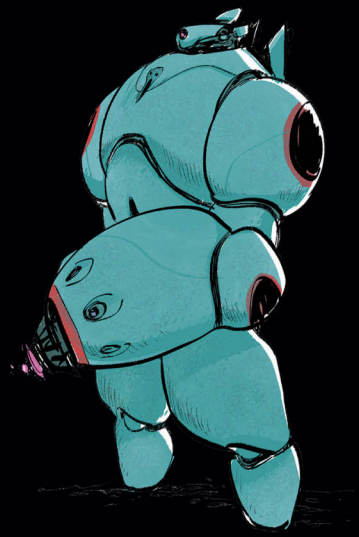
And finally, Shannon Rutherford, my soon-to-be-husband, my "third ear"—you listened and loved and supported me every day as I wrote this book amid the furor of wedding planning. You kept me sane. I love you.

—Jessica Julius

TADAHIRO UESUGI / DIGITAL



JIN KIM / DIGITAL



Jessica Julius is a creative executive at Walt Disney Animation Studios. She was the Story Production Supervisor on the Academy Award–winning film *Frozen* and has worked on Academy Award–nominated films such as *Wreck-It Ralph*, *Tangled*, *The Princess and the Frog*, and *Bolt*. She lives in Los Angeles with her husband.

John Lasseter is a two-time Academy Award®–winning director and chief creative officer of Walt Disney, DisneyToon and Pixar Animation Studios, and principal creative officer of Walt Disney Imagineering.

Don Hall is the director of Walt Disney Animation Studios' feature film, *Big Hero 6*. He was also a Director on 2011's *Winnie the Pooh* for which he was nominated for an Annie Award. For many years, Hall worked within the story department on several Disney animated features, including the Oscar®-nominated *The Princess and the Frog* (head of story), and *Tarzan*. He was the head of story for 2007's *Meet the Robinsons*, for which his storyboarding received an Annie nomination. Hall attended University of Iowa and Cal Arts. He currently lives in Los Angeles with his family.

Chris Williams is the director of Walt Disney Animation Studios' feature film, *Big Hero 6*. Williams directed and co-wrote 2008's *Bolt* as well as the animated short film *Glago's Guest* for which he won an Annie Award for storyboarding. Williams earned an Annie Award nomination for his writing on 2000's *The Emperor's New Groove*. He also served as executive producer for *Prep & Landing*, which was honored with four Emmy® Awards including Outstanding Animated Program. Williams has worked in the story department on several Disney animated features including *Mulan*, *Lilo & Stitch*, and *Frozen*. He lives in Los Angeles, California, with his wife and family.

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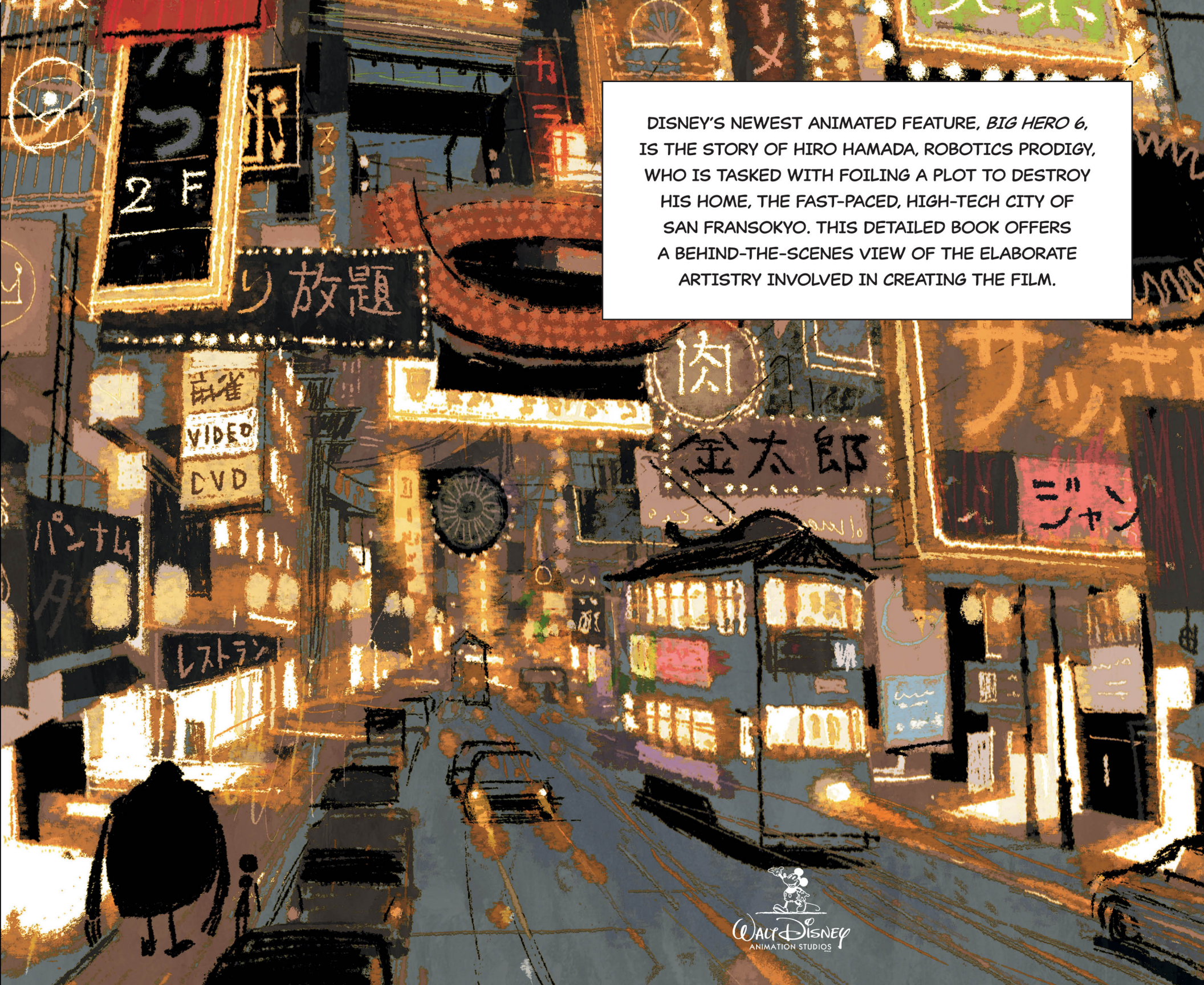

DISNEY'S NEWEST ANIMATED FEATURE, *BIG HERO 6*, IS THE STORY OF HIRO HAMADA, ROBOTICS PRODIGY, WHO IS TASKED WITH FOILING A PLOT TO DESTROY HIS HOME, THE FAST-PACED, HIGH-TECH CITY OF SAN FRANSOKYO. THIS DETAILED BOOK OFFERS A BEHIND-THE-SCENES VIEW OF THE ELABORATE ARTISTRY INVOLVED IN CREATING THE FILM.

Walt Disney Animation Studios

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